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The electronic academy revisited

Blaise Cronin

Dean and Professor of Information Science, Indiana University, Bloomington, Indiana, USA.
Email: bcronin@indiana.edu

Abstract Fifteen years ago the author published an article in *Aslib Proceedings* entitled, 'The electronic academy', which assessed trends in distance education and open learning¹. The paper provided an overview of the then dominant delivery technologies (e.g., broadcast television, videotext, audiographics, teleconferencing) and also engaged the issues of cost and quality. It is instructive to revisit that article and reflect on the extent to which the world has moved on, particularly in terms of technology and pedagogy. Naturally, the 1984 article made no mention of either the Internet or the World Wide Web, both of which are necessarily centre-stage today in any serious discussion of asynchronous or network-based learning. While technological advances have played an important part in accelerating the adoption of new modalities of remote learning, there are other factors (e.g., economic, socio-cultural) to be taken into account. This article offers a wide-angled review of developments in distance education and distributed learning: specifically, it describes the structural dynamics of the emerging virtual marketplace for perpetual learning products and services. Though written from a primarily North American perspective, the paper highlights thinking and practice globally.

Change drivers

Sir Anthony Kenny's² affectionate account of his days at Balliol College, *A Life in Oxford*, evokes powerfully the idea of a small, tightly-knit community of scholars and students. Of course, the world of ivy-clad quadrangles and junior common rooms constitutes a distinctly privileged and selective view of what higher education entails – on both sides of the Atlantic. Whether it is Kenny's Oxford or Thomas Jefferson's Virginia, the defining feature of the academical village is that student and professor come together in place and time to create and share knowledge. This physicalist model has served society well over the centuries, but it is no longer the only, or necessarily preferred, one in an age of ubiquitous computing, asynchronous communication and virtual communities. We are moving from an era of 'culturally concentrated knowledge'³ to one of 'socially distributed knowledge'⁴. The implications of this shift for traditional universities are manifold.

The rapid rise of distance education (DE) and distributed learning (DL) as a major focal area in higher education is a response to pervasive socio-economic and technological trends. Principal among these are: digitalisation, demographics and deregulation. By

digitalisation I mean to imply the nexus of technologically-linked developments which facilitate and promote online learning. These include advances in wide-area networking, distributed computing, collaboration technologies and digital libraries, all of which make it possible to access academic staff, student peers, courseware, institutional resources and publishers' materials remotely. Demographic and lifestyle shifts are also powerful change drivers. In North America and elsewhere (e.g., some Pacific Rim nations) the character of the student body is changing in terms of geo-demographic composition, life-cycle learning needs, expectations, aspirations and mobility. These shifts have major supply side implications as capacity is stretched and student demand for flexible educational products and services grows. At the same time, the *de facto* monopoly exercised by old line institutions of higher education is being challenged by a raft of new entrants, which includes commercial/corporate universities and entrepreneurial virtual universities. Progressive deregulation of the higher education marketplace is a feature of the North American landscape. Employers are increasingly concerned with evidence of competencies and proof of learning, and are correspondingly

disenchanted with the traditional seat/time-based metrics used in academia. The threat to established universities is intensified by consistently greater-than-inflation tuition increases driven, principally, by the cost of academic and support staff, which reduces the affordability and perceived cost-attractiveness of the traditional higher education experience. The cost of a college education in the US has outpaced significantly the consumer price index over the last two decades. For such reasons, dramatic diversification of the provider population and a progressive deregulation of the marketplace seem certain.

The escalating demand for lifelong learning is creating unprecedented opportunities for both established and non-traditional providers of educational products and services. Changing social conditions (i.e., different patterns of work, intensified competition for jobs, higher rates of turnover, short-term contracts, erosion of social security) will force the pace of educational reform, as students seek access to just-in-time knowledge in an age of serial careers. Conversely, those out of work will require flexible education/training to satisfy both vocational and avocational needs. There is little doubt that the changing nature (and volume) of demand for accessible and flexible higher/continuing education cannot be satisfied solely by existing providers, who often lack the capacity and attitudinal flexibility to scale up or modify their core business activities. A new dynamic is evolving, one which will result in a hotly contested marketplace.

Traditional universities are struggling to assess how their various market segments (e.g., residential undergraduate, postgraduate, executive education, continuing professional development, customised on-site delivery) are likely to be affected over time by the kinds of developments which are now universally recognised as bearing down on the old order. How can mainline universities develop institutional capability in the DE/DL domain? How can academic staff be encouraged, mentored and rewarded for experimenting with distributed education technologies and new pedagogic approaches? What shifts in institutional culture; what systemic changes in policy and practice (such as pricing for virtual markets)

need to be implemented, and how? How can the new technologies augment and enhance on-campus teaching and learning? In which directions should these institutions proceed, and where should selective investments be made? Which markets should they target, and with whom should they partner, and under what conditions? Almost every university in the USA, be it large or small, state-supported or private, is attempting to chart a course in these uncertain waters. Some of the most prestigious Ivy League (i.e., private) institutions are developing niche-oriented programmes, which focus on specialised degrees, professional schools and international links⁵. Some of the major public research universities have a very clear strategic sense of what is needed. Even if there is disagreement as to the optimal mix of organisational structures, technical platforms and pedagogic approaches, there is consensus that distance education and distributed learning, however defined, present challenges and opportunities of major strategic import to traditional institutions of higher education.

Higher education market

Higher education (HE) in the USA is an expanding market, with a projected two million increase in the number of traditional-age college students over the next decade. Currently, some 3,600 institutions of education enrol 15.1 million students (12 million in full-time equivalent (FTE) terms), and spend \$156 billion in operations delivering educational services and products to this particular consumer population. The HE population can be broken down into six major groups⁶:

- 1.39 million traditional undergraduate students (ages 17-24) seeking a bachelor's degree and enrolled full-time at a campus;
- 650,000 traditional postgraduate students (ages 22-34) seeking either an academic or professional master's or doctoral degree and enrolled full-time at a campus;
- 2.9 million semi-traditional undergraduate students (17-24), enrolled part-time at a campus and usually working part-time in a non-career, entry-level job;
- 487,000 semi-traditional postgraduate students (ages 22-34) seeking an academic

master's or doctoral degree and enrolled part-time at a campus;

- 5.3 million non-traditional undergraduate students (age >25) who are career-oriented members of the labor force, usually seeking a first degree in an on- or off-campus program, enrolled full- or part-time;
- 880,000 non-traditional postgraduate students (age >25) working full-time, enrolled full- or part-time, seeking a professional master's or doctoral degree in an on- or off-campus program.

In general, the last four groups, the non-traditional students, are most likely to respond favourably to distributed or open learning models, which obviate the need for physical presence on a campus. As the figures above indicate, these students constitute almost 77% of the current HE student body. On an FTE basis the proportion is estimated to be 42%, which is an increase from 28% fifteen years ago. With the rapidly changing work environment, the non-traditional population is expected to grow at an even more rapid rate. Indeed, there are projections that the workforce alone will add 20 million FTE students by the year 2000. Demand for the traditional campus experience, where education is bundled with socialisation, cultural exploration, athletics and a sense of history, will persist, though competition will intensify among generic providers. There are still many who are seeking 'a college that is a confluence of people and place, of character and fate, architecture and landscape, college as a personal style, a way of life, college as a place where history matters and people remember, an island in space and time', in the words of P.F. Kluge⁷. The drawing power and attractiveness of 'commuter' campuses, however, will be threatened by a new breed of (geographically) unbounded interlopers – distance/flexible education providers whose unit operating costs are significantly lower than those of traditional colleges and universities.

In education, as in other matters, consumers will shop around for a product which is variously 'best of breed', competitively priced, employer-valued, convenient and accessible. Institutions which fail to compete convincingly on one or more of these dimensions will have

good reason to be concerned. There is little doubt that the flexibility and conviviality of digital media appeal to the post-secondary market. InterEd, an HE research firm, estimates that approximately one million students are taking courses electronically at present, and that the number will triple by the end of the century⁸. The demographic data paint a striking picture of the asymmetry between imminent demand and existing capacity within the higher education sector generally. Nowhere is this more graphically evident than in the state of California, where a pulsing birth rate makes it fiscally and physically impossible to build enough campuses to meet current needs. Enrolment demand for the California State University (CSU), the largest institution of higher education in the US, is projected to reach approximately 180,000 additional students over the course of the next 15 years. Given the CSU system's capacity limitations, this means that some 50,000 students cannot be accommodated physically. Faced with this situation, CSU is exploring a variety of technologically-mediated means of enhancing outreach and inter-campus sharing of programmes, courses, resources and services. The same holds true for the state of California as a whole, hence the recent launch of California Virtual University, a collaborative initiative involving all accredited universities and colleges in the state, which is designed to tie together their many online and distance education programmes and courses (<http://www.california.edu/>). Other states are confronted by similar pressures. Many western states are facing double digital population growth rates, coupled with escalating unit costs in higher education. Utah, for example, expects HE enrolments to increase from 80,000 to 150,000 over the next twelve years. New ways of thinking and acting will be required to deal with this surging demand.

The broader issue here is that of institutional capacity. Will there be a sufficient number of institutions of higher education to satisfy demand? Is the traditional university, defined in terms of its campus facilities and full-time academic staff, necessarily the most appropriate model for universal delivery in the next millennium? Which provider models are likely to work best in which environments?

What if the enrolment projections are underestimates? Will the solutions which work best on the national stage prove equally effective at the global level? And to what extent will the market bifurcate into students seeking degree-like qualifications or learners pursuing certification or competency-based programmes? Can the same institutional delivery mechanisms and assessment processes satisfy the demands of the two increasingly divergent marketplaces? The compound challenge facing higher education administrators in the information age is to design a pedagogic model which (i) extends access, (ii) improves the quality of learning, and (iii) contains costs.

Global projections for the next decade suggest a massive potential learning pool of over 100 million FTE students. Given the trajectory of this demand curve, and given the prohibitive cost of building a sufficient number of new campuses to accommodate this population explosion, governments and universities alike will be challenged to find imaginative and effective ways of responding. In many less developed countries and newly industrialised nations, rising birth rates are placing tremendous stresses on fledgling higher education systems. In Malaysia, for instance, half of the 20 million population is under the age of 25, and the local university system is incapable of absorbing even a small fraction of existing demand. One partial solution has been to send students to overseas universities, typically in the US, UK and Australia, but this translates into an ill-affordable annual trade deficit in educational services of \$0.5 billion for the Malaysian government. As these nations develop indigenous capability with online educational delivery strategies, such large-scale exportation will not be necessary. The knock-on effect will be a net reduction in overseas tuition revenues for foreign HE institutions. At the same time, countries like Malaysia, Indonesia, South Africa, Mexico, Venezuela and Chile constitute potential markets for North American and other educational content providers who are capable of designing and delivering customised courseware to national governments or in-country commercial resellers/franchisers of higher education goods and services.

Institutions of higher education and other stakeholders are scrambling to position themselves in this fast-changing marketplace. Net-work-based learning may mean the deconstruction of higher education, or it may mean the diversification of higher education. Trend analysis, however, raises two related problems: (i) identifying developments which are not trends, but are mistaken for trends; (ii) detecting developments, which are leading indicators of trends, but not recognised as such. Expert opinion, however, seems to agree on two things: (i) that the Internet and the Web will constitute the delivery environment of choice for serious providers in the distributed education marketplace, and (ii) that notable increases in bandwidth and transmission speeds will be achieved in the near- to medium-term. Even allowing for inflationary estimates, predicted growth rates for the Internet and the World Wide Web are spectacular. MCI has calculated that Internet traffic is increasing by 30% per month. Use estimates for the year 2000 vary somewhat, but not the trend line: IDC estimates that the total number of Internet users will be 163 million; Morgan Stanley's forecast is 152 million. Web statistics are no less impressive. It is estimated that 7.7% of adults in the US currently use the Web, with an estimated 9 million individuals accessing the Web on a daily basis. As of January 1997, there were an estimated 650,000 Web sites, of which more than 60% were commercial in character.

Structural dynamics

Distance education is not a new phenomenon. The statistics (see next section) for the US, provided by the Distance Education Training Council (DETC), reveal the scale of this 'shadow education market'⁹. However, the structural dynamics of the distance education/distributed learning markets are altering markedly in real time, and thus deserve close scrutiny. Attachment 1 uses Michael Porter's¹⁰ five forces model to analyse the bases of competition in this evolving marketplace. Each of these force fields is considered briefly below.

Internal Rivalry: This is an industry which is experiencing rapid intensification of internal competition, as new entrants appear

on the scene to challenge the *status quo*. In addition, the market is becoming global in character – the Open University is just as likely to be a player on the North American stage as the University of Michigan is to be a presence in Hong Kong. With the rise of the Internet and the World Wide Web, geography ceases to be a major barrier to market entry and expansion.

Entry Barriers: Not all higher education institutions are equally well-equipped or positioned to become instant (and successful) players in the emerging DE/DL market. Lack of distinctive or high-quality content, or weak brand name recognition, may be inhibitors. Other barriers to entry include accreditation, institutional inertia and cultural resistance among academic staff to non-traditional models of teaching and learning, in and outside the classroom.

Supplier Power: The surge in demand for both traditional higher education products (degrees/certificates) and continuing professional development (competencies/skills) is creating short- and long-term opportunities for entrepreneurial and flexible content providers. However, the fact that traditional universities have door-step access to reservoirs of high-grade human and structural intellectual capital provides them with an important basis of comparative advantage over new entrants and start-ups.

Buyer Power: Consumers in the DE/DL market typically know what they want, and given the proliferation of content providers, are going to select the mix of courses or modules which best matches their needs, irrespective of source. If lifelong learners are dissatisfied with the offerings delivered through existing extension/outreach programs, they can switch fairly painlessly to alternative providers. Further, the emergence of hosts/brokers will increase the transparency of the DE/DL marketplace, and strengthen the bargaining power of the consumer.

Substitutes: It is not inconceivable that there could be a technology backlash, as students/online learners become disenchanted with the impersonality of computer-mediated and network-based learning approaches. A 'back to basics' reaction could restore the primacy of the traditional classroom (and asso-

ciated social/pedagogic experiences). Conversely, the rapid 'domestication' of information and communication technologies could result in the emergence of a global market for commoditised digital learning modules produced, in the main, by corporations and industry/academe consortia with little or no allegiance to the traditional values, mores and operating practices of higher education.

Market characteristics

It is estimated that more than three million Americans are enrolled in DETC-accredited institutions. Over the last hundred years, some 100 million Americans have taken distance study/correspondence courses. This has been facilitated by a wide array of delivery systems: audio conferencing, audio-cassette, audio-graphic conferencing, broadcast television, computer conferencing, computer tutorials, electronic mail, interactive audio/video, online services, print, radio broadcast, satellite network, tele-classes, telephone contact, videocassette. At present, more than 60 distance education institutions, offering more than 400 different academic, vocational, and avocational courses by mail or telecommunications, are accredited by the DETC. The typical student in a DETC-accredited institution is 30 years old; 62% are male; 30% already have an academic degree; and 90% pay tuition without external support. The *Oryx Guide to Distance Learning* (<http://www.oryxpress.com/scripts/book.idc?acro=DISL2>) lists almost 300 accredited institutions offering electronic and other media-assisted courses, while *Peterson's Distance Learning Guide* (<http://www.petersons.com/dlearn/>) includes more than 700 universities and colleges offering cybercourses. Other sources estimate the number of 4-year colleges offering cybercourses at more than 1,000¹¹. In any event, the gradient of the trend line is unmistakable.

An April 1997 analysis of the US distance learning systems and service market by FIND/SVP identified this as a fledgling industry with major growth potential, estimated at roughly 20% annually between now and the end of the century. A study by the Gartner Group projected that demand for technology-based training would increase 10% between 1996

and 1998 to \$12 billion. Currently, corporate America spends somewhere between \$30 billion and \$70 billion a year (approximately 1% of gross revenues, or a considerable chunk of all expenditures on higher education) on continuing education to improve employees' skill sets, and a growing slice of that expenditure line is going into distance education. Firms with corporate universities typically spend 2.2% of payroll on training – twice the national average. In a 1996 survey of corporate university directors, Quality Dynamics found that more than 60% intended to use the Internet for training¹². There is interest among corporations with in-house universities in partnering with accredited institutions of education. A good indicator of this trend is the fact that the American Council on Education (ACE) has accredited over 7,000 corporate classes, meaning that they can be counted towards university degrees – a three-fold increase since 1985. However, between 1996 and 1997 the number of companies expecting to grant degrees in partnership with universities actually dropped from 33% to 25% among those surveyed. This may be due in part to the lengthy process involved in building business/college partnerships – the difference between 'corporate speed' and 'college speed'.

Stakeholders

Apart from the expanding array of providers (be they traditional or corporate universities) there is an ancillary raft of organisations involved in the shaping and building of the digital education marketplace. Some of the major participants and the roles they perform are described briefly below.

Infrastructure Builders: The infrastructure to support global distance education is being put in place, and planning frameworks continue to shorten as the pace of technological change accelerates. Two main groups, equipment vendors (hardware/software manufacturers such as IBM and Sun Microsystems; specialist technology developers like Lucent, Silicon Graphics, VTEL/CLI) and telecommunications companies (e.g., AT&T, MCI/BT, Pacific Bell) along with cable and satellite organizations (e.g., TCI, INTELSAT), are ultimately responsible for putting in place the

communication and learning support systems which will constitute the foundations of this emerging marketplace.

Brokers/Resellers: At the same time, the marketplace is being moulded by a raft of educational brokers/value-added resellers, who showcase and deliver courses on behalf of primary content providers to potential consumers. The Electronic University Network (EUN), to take one example, prides itself on being 'the largest and most experienced source of accredited college and university education offered entirely online'. EUN's Web page makes explicit the company's interest in working with well-known colleges and universities for the very good reason that their presence/participation 'will lend luster and legitimacy to the distance learning movement' (<http://www.wcc-eun.com/eun/>). Another player in this arena is JEC Connection (formerly Mind Extension University), which is owned by Glenn Jones (Chairman and CEO of Jones Intercable, Jones Spacelink and Jones International) and has been offering online courses for academic credit in cooperation with selected universities since 1985 (<http://www.jec.edu/right.html>). A niche broker in this market is the Executive Education Network (EXEN), owned by Westcott Communications (<http://www.exen.com/>). It delivers management development programmes from leading business schools directly into the offices of more than fifty Fortune 500 companies. EXEN promotes itself as a 'turn-key service', offering 'a live, interactive distance learning satellite network reaching electronic classrooms at subscribers' offices nation-wide'. EXEN currently delivers to its subscribers executive education courses from, amongst others, Carnegie Mellon University, University of Pennsylvania, University of North Carolina.

Support Services: The third group of players includes the many support services, which facilitate the distributed learning process – electronic bookstores, digital libraries, learning centres, proctoring services, and boutique software providers. Although perhaps less glamorous than other parts of the DE/DL value/production chain, support services are a key to ultimate business success. Experience shows that inadequate and/or unreliable sup-

port services can damage significantly the credibility of a content provider in this marketplace. Serious investment in infrastructure is thus required: by way of illustration, the Digital Library Learning Initiative in the state of Florida provides students with access via the Internet and World Wide Web to a large variety of proprietary databases from their homes, the libraries of members of the Florida Distance Learning Network (FDLN) and also from public libraries across the state (<http://www.dos.state.fl.us/dlli/>). In addition, it provides expanded library services to assist distance learning through reference/referral services, library user training, document delivery, and expanded borrowing privileges. Initial funding from FDLN and other bodies (fiscal 1996-1997) was \$2 million, and a budget request for a further \$3 million is in place.

Policy Makers: Another set of stakeholders comprises those organisations and associations with a more or less vested interest in creating the conditions necessary for a stable, sustainable and essentially transparent marketplace. This stakeholder group also includes the myriad organisations involved in the accrediting/certification process. As things stand, the single greatest entry barrier faced by corporations with aspirations to diversify into the mainstream education market, nationally and globally, is accreditation. If accreditation can be commoditised, to all intents and purposes, then traditional universities will have lost their monopolistic control of the market. An early sign of this putative trend was the creation in 1995 of the Global Alliance for Transnational Education (GATE), an international alliance of business, higher education and government 'dedicated to principled advocacy for transnational educational providers' (<http://www.edugate.org/vision.html>).

In the US, organisations such as EDUCOM, CAUSE, and CNI play an important role in shaping public thinking and policy. EDUCOM, in particular through its National Learning Infrastructure Initiative (NLII), is a prime mover in ventilating key policy issues relating to systems interoperability and the need for collaborative development of high quality instructional software capable of sparking and sustaining a robust commercial mar-

ket for college-level, interactive learning materials (<http://ivory.educom.edu/program/nlII/nlIIHome.html>). Scalability will not be achieved where the not-invented-here syndrome prevails, or where institutions support inherently particularistic or idiosyncratic staff development initiatives, hence the strategic (collective) significance of the NLII's Instructional Management Systems (IMS) project, the goal of which is to develop specifications capable of supporting cross-platform organisation, retrieval and management of Web-based instructional materials¹³.

Digital age developments

The university as we know it will not disappear in the digital age, though there will be a shake-out. Many of the physicalist assumptions which underpin the prevailing model may be cast aside in favour of radical new organisational forms – and, possibly, novel 'nomadic' models for next millennium staff. Such thinking has been inspired by Jacques Attali's¹⁴ idea of digital age 'nomadic objects' (e.g., palm top computers, cellular phones) which 'fulfil the growing demand by consumers for more control over their lives by enabling them to technologically remove themselves from the institutional work-place'. The decoupling of product from place, the essence of distance education, is being turbocharged by recent advances in information technology. The much vaunted virtual university, of which there as yet are few credible operating instances, does not necessarily herald the demise of the American super-campuses of the 1960s ('independent cities, secular, professional, credential-driven', in the words of Anne Matthews¹⁵) but it does call for a fundamental reassessing of institutional missions and organisational structures. James Duderstadt¹⁴ has reconceptualised the university as a 'knowledge server', the principal role of which is to provide 'knowledge services (i.e., creating, preserving, transmitting or applying knowledge) in whatever form needed by contemporary society'. He asks whether the university of the 21st century will be 'localised in space or time' or become more of a 'metastructure' with which people interact throughout their lives?

What, then, should be the design blueprint for a university in a society where, to quote Attali again, 'the sense of place that gave birth to all previous cultures will become little more than a vague regret?' How do major research universities like Illinois, Indiana and Michigan, with huge fixed costs in plant, equipment and expensive (tenured) academic staff, gradually reinvent themselves to remain viable actors in a hybrid world – a world of atoms and bits¹⁷? Whatever the answer, it is important not to pose the question as an either/or – the choice is not between two modes of education, campus-centric and distance. Rather, the trick is to create balance and achieve synergies, while preserving integrity of purpose and product. One approach which seems to be finding favour is what might be termed incorporation. Deakin University, in Australia, for instance, has created a virtual campus within the fold. A similar approach has been adopted by a number of US institutions: the University of Massachusetts at Dartmouth has created CyberEd; the University of Maine has an extensive Education Network; Washington State has established Virtual Washington State University, and Colorado has launched the University of Colorado Online. A similar strategy has been developed successfully by the Instituto Tecnológico y de Estudios Superiores de Monterrey in Mexico, arguably the leading provider of distance education in the southern hemisphere. La Universidad Virtual del Sistema Tecnológico de Monterrey uses satellite delivery, video-conferencing, the Internet and traditional correspondence courseware to reach thousands of students and working professionals, nationally and internationally.

Virtual learning communities

Let me quote from a recent California State University paper¹⁸, *The emergence of electronic pedagogy*:

'Learning remains an intensely human and social experience, based on group dynamics developed across a spectrum of network-mediated, as well as classroom and residential activities.'

This helps explain the preference in some quarters for the term 'network-based learning'

over 'distance education'. The reflexive dichotomy between campus-centric and distance education is unhelpful. In fact, the term 'distributed learning' better captures the suffusing of computer-mediated instructional approaches into all aspects of the learning process, on and off-campus, than does either 'distance education' or 'network-based learning'. All the evidence, whether in terms of learning outcomes, or student/teacher satisfaction measures, underscores the importance of face-to-face contact ('zones of proximal development', to use Vygotsky's¹⁹ term), irrespective of the pedagogic model. The realisation that learning is in many aspects a social activity has helped foreground the concept of 'learning communities' within DE discourse. As Seely Brown and Duguid²⁰ so aptly put it: 'Learning involves inhabiting the streets of a community's culture.'

Early evidence suggests that many essentially place-bound institutions are seeking to develop a complementary presence in emerging virtual markets – local, national and international – using a mix of technological solutions and pedagogic models in the process. The experiences of other early adopters also support this hypothesis. Stanford University has successfully leveraged its reputation as a centre of excellence for teaching and research in engineering to become a market leader in satellite-delivery of engineering courses. Duke University's Fuqua School of Business has recently pioneered the launch of an Internet-based Global Executive MBA programme, which lasts 19 months and is priced at \$82,500. Almost half of the currently enrolled students in the Duke program live outside the US – a good example of the transferability of brand power from physical to virtual, from national to global markets.

A comparable programme is offered by Ohio University's College of Business. Its MBA, which combines project-centred action learning and virtual community-based learning (with Lotus Domino as the delivery platform), is a two-year, lock-step program with multiple residency requirements and extensive network-based learning. The Ohio MBA is priced at \$25,000, has approximately 30 matriculated students, and apparently breaks even with an

enrolment of less than twenty. A variant on this theme is LEEP3, The University of Illinois's distance education option for its Graduate School of Library and Information Science's master's degree. Multiple modes of instruction are used: audio and video transmissions over the Internet, MOOs (Multiple-user Object-Oriented domain), WebChat, Email, mailing lists, CU-SeeMe and occasional telephone conference calls. These are combined with relatively brief periods of on-campus instruction, beginning with a 12-day stay at Urbana-Champaign designed to forge social ties and to bring the cohort (typically 20+) up to speed on the use of technology. In this case the University has provided the school with \$600,000 in pump-priming funds over three years and also allowed it to retain all additional tuition revenues.

Starr Roxanne Hiltz²¹ has described the experiences of the New Jersey Institute of Technology (NJIT) in launching an undergraduate major in information systems to be taught via Virtual Classroom™ plus Video. Her conclusions are worth noting in some detail: asynchronous learning networks (ALNs) tend to increase (i) access to educational opportunities, (ii) efficiency (speed of completion) of the degree, and (iii) the perceived quality of the educational experience. This, however, is conditional on a number of factors, including active participation by the students and sustained collaboration/communication with classmates. The NJIT experiment also concluded that the enrolment of 'truly distance students' was smaller, slower and more difficult than expected. As far as costs of ALNs are concerned, Hiltz notes that large and continuing capital investment is needed along with extra preparation time for academic staff. In addition, with constantly changing technology and complex logistical support issues, things seem, overall, to become more rather than less complicated. The NJIT experience highlights the importance, and difficulty, of translating pedagogical innovation into institutionalised practice.

Virtual pioneers

Plans have been drawn up by the governors of thirteen US states (plus Alaska and Guam) to create a virtual university – a free-trade zone, in

effect, for the exchange of educational tokens. The Western Governors' University (WGU), as it has come to be known, will not only have no ivy, it will have no campus, professors, or courses of its own. The concept of the WGU (<http://www.westgov.org/smart/vu/vu.html>) is far removed from the classical Oxbridge model; indeed, it represents the most radical attempt to date to challenge the dominant paradigm of university education and to create a virtual behemoth. The WGU is an embryonic instance of what Cardinal John Henry Newman²², more than a century ago, presciently implied by the phrase, 'a so-called University, which dispensed with residence and tutorial superintendence and gave its degrees to any person ...'. In essence, the WGU will act as a broker/market-maker and banker, connecting customers (i.e., students) with providers (i.e., universities, corporations, commercial resellers) of quality-controlled courseware designed to generate demonstrable learning outcomes by exploiting advanced information and communication technologies.

The WGU has been conceived of as a market-led, just-in-time, competency-based, quality-controlled, cost-effective, client-centred, accredited higher education institution. The key characteristics of the WGU are:

- (a) anyone can offer courses provided the competencies to be achieved are specified;
- (b) it is market-driven in terms of consumer costs and modes of delivery;
- (c) it decouples the instruction and assessment processes;
- (d) the emphasis is on counselling, tutoring and outcomes assessment.

The WGU's enrolment projections for the year 2006 are ambitious: it aims to have 8,000 students enrolled in competency-based degree programs, 15,000 in competency-based certificate programs, 30,000 in corporate training programmes and 42,000 students taking classes from other institutions offered via WGU²³. The WGU initiative is bold, both in conception and scale. Even if the venture fails, it will have stimulated unprecedented public debate, inside and outside the academy, on the nature, structure and purpose of the 21st century university and on the role of the professorate.

Another ambitious blueprint is UNITAR, the Malaysian Virtual University, which is being developed in collaboration with Scientific Applications International Corporation (SAIC), a leading systems integration company based in the US. SAIC has been awarded a 5-year contract to design and implement the technical infrastructure to support this flagship venture for its Malaysian backers. The company is also charged with identifying, sourcing and, where appropriate, custom-commissioning educational content. UNITAR will provide electronically based delivery of courses and degree programmes, using both synchronous and asynchronous communication. A majority of the courseware will be in English, with some Malaysian elements. The launch date is 1998, and the aim is to have 10,000 students matriculated within two years; 100,000 within five. International accreditation will be sought. In the longer term, the goal is to develop an export business, providing high-quality education to other ASEAN nations – a case of information technology as a 'force multiplier'. In many respects, the UNITAR and WGU initiatives are based on common conceptual and business models.

Competitive diversity

In recent years, a wave of mainstream colleges and universities has attempted to stake a claim in the distance education and lifelong learning marketplace. Some dual mode institutions, like Columbia and Stanford Universities, have a long-standing interest in distance education provision, notably the delivery of graduate engineering programmes – more than 250 courses in the case of Stanford via its Instructional Television Network to 2,000 corporate (member) sites over the last 28 years. At the other end of the spectrum are single mode universities, such as the UK's pioneering Open University, Athabasca in Canada or the Universitat Oberta de Catalunya in Spain, which have pinned their flags firmly and successfully to the mast of distance/open learning.

Currently the second largest private (accredited) university in the United States, the University of Phoenix has approximately 40,000 students scattered mainly across North America. More than 3,000 of these now study

online, the beginning of likely significant migration. The University of Phoenix (<http://apollo1.uophx.edu/>) has more than 4,500 contract teaching staff (only 45 full-time academic staff are on the payroll), leased premises on more than 40 sites in the US, and an operating budget of \$180 million. Its enrolment target for the year 2000 is 100,000. Phoenix, through its parent company, the Apollo Group, is quoted on the stock market – and currently valued at \$1.5 billion. (The Group's operating profit in 1996 was more than \$21 million.) Its student body is also atypical: the modal income of students is \$55,000 and their average age is 35. Unlike at most traditional universities, where students can enroll in courses covering everything from anthropology to zoology, the University of Phoenix offers much more of a *prix fixe* menu: 80% of its students are taking business courses/degrees (60% of these at the undergraduate level). Such are the advantages of being a niche provider in a demand-led market. Another successful niche provider is National Technological University (NTU), which is the market leader in providing distance education to engineers via live satellite to receiver sites across North America and the Pacific Rim (<http://www.ntu.edu/>). A private, accredited (non-profit) institution founded in 1984, NTU currently offers more than 1,300 courses and 13 master's level degrees to scientists, technical professionals and managers worldwide. At any one time, more than 100,000 engineers/technicians participate in more than 400 (non-credit) Advanced Technology of Management Programmes covering more than 40 topic areas.

The materials on offer from the hundreds of other current providers vary greatly in terms of content, flexibility, and pedagogic sophistication, as do the delivery methods and media, which now range from correspondence course packages through cable TV and interactive video to the Web and the immersive worlds of MUDs (Multi-User Dimensions) and MOOs. But there are other significant changes, most noticeably the proliferation of content providers and distributors. Universities are no longer competing only with peer institutions: their monopolistic hold on higher education is being challenged aggressively by a slew of

alternative providers, determined to contest the prevailing credentialist model. Alongside traditional (dual mode) American universities like Wisconsin, Michigan or Indiana, there is a fast-growing population of single mode institutions, such as City University, The Graduate School of America, Nova, Walden, Greenleaf, University of Phoenix and, of course, well-established pioneers like the UK's Open University, all of which are developing or implementing online delivery capability. Some of these, like Greenleaf, are very small and narrowly focused (it offers a Ph.D. in Leadership and Administration); others are larger enterprises. For example, the NCA-accredited City University (also a private, non-profit enterprise) presently offers 80 academic programmes at different levels to a student population, variously estimated to be in the 8,000-14,000 range, whose average age is 37. A sign of the times is the fact that a dozen or so higher education companies are now traded on the Nasdaq and New York Stock Exchanges²⁴.

There are other providers: corporate universities (Disney, Motorola, etc.), academic alliances (such as the Committee on Institutional Cooperation (CIC)), Midwestern Universities Consortium for International Activities (MUCIA), and its arms-length commercial spin-off (MUCIA Global), and with Federal Government departments/ agencies – major suppliers and consumers of distance education. In the virtual category, there is a small number of start-ups. Some, like Magellan are just coming on stream. International University, designed to deliver global, online education, is one of the latest. ICS Learning Systems (<http://www.icslearn.com/>), the self-proclaimed world leader in distance education, is also extending its long-established business into the online world. In addition, there is a growing secondary market for design, production and development services linked to distributed education. Companies like Real Education (whose mission is 'to build and manage complete online university campuses and manage continuing education centers' – it has contracted with the University of Colorado) and Renaissance (which describes itself as a 'consulting and integration organisation special-

ising in research and development of media-rich networked computer environments for multimedia learning, distance education and corporate training') are emerging as full-service, systems solutions providers to the electronic arm of the distance education business (<http://www.realeducation.com>; <http://www.rovers.net/-ren/main.html>).

New entrants

The deregulation of the higher education marketplace is imminent, and much uncertainty lies ahead. Dolence and Norris²⁵ are incisive in their analysis of the change drivers and emerging opportunities in the world of higher education:

'The race is on to determine ownership of the learning franchise for the Information Age.... An array of organizations is positioned to vie for new opportunities – institutions of higher education, corporations, technology companies, for-profit education enterprises, and research laboratories. New strategic alliances and commercial ventures will be formed to tap these potentials.'

This is not a world with which the majority of academic staff is either especially familiar or, indeed, comfortable, as David Noble's²⁶ much discussed essay, *Digital diploma mills*, makes abundantly clear, hence the importance of engaging issues of institutional culture in any strategic planning exercise related to distance education. In his book, *The Death of Competition*, James Moore²⁷ uses the term 'opportunity environment' to signify a 'space of business possibility characterised by unmet customer needs, unharnessed technologies, potential regulatory openings, prominent investors, and many other untapped resources'. He was not talking specifically about the distributed education marketplace, though he might well have been. Moore's central metaphor, that of 'business ecosystems', is used to inspire a new strategic model for business. He challenges the assumption that industry structures are fixed and that there are necessarily 'distinct, immutable businesses'. Instead, he argues for 'strategic co-evolution' among players who may, historically, have viewed one another as rivals. Enlightened cooperation seems to be a

favoured approach by several aspiring players in the distributed education market, even if Moore's ecosystem metaphor is not invoked explicitly by those involved.

At present, no one kind of alliance seems to dominate, but there is evidence of continuous exploration and experimentation. A good example of an industry-academe partnership is the Collaboration for Interactive Visual Distance Learning (CIVDL), which involves a group of universities (e.g., Columbia, MIT, Penn State, Stanford) and a clutch of major companies (e.g., 3M corporation, AT&T, United Technologies) to deliver graduate level engineering courses to academic and corporate learners via interactive compressed video. City University has a partnership programme which includes manufacturing concerns in Germany, Slovakia, China, Thailand, Switzerland and the US. If American business were to aggressively outsource workforce training/development needs along these lines, universities would, in theory, be well positioned to become on- and off-site providers of customised learning materials. A notable joint venture is the Michigan Virtual Auto College (MVAC), a multi-million dollar collaboration between Michigan State University, the University of Michigan, the State of Michigan and the automotive industry (<http://www.mvac.org/>). The MVAC is being created to provide technology-enhanced courses and training for the automobile industry, including the Big Three US manufacturers. The longer-term goal is that the MVAC will serve as a platform for the State to build an education export industry. A different mix is driving a nationwide initiative in legal distance education. In early 1997, the American Bar Association (ABA) and Data Broadcasting Corporation announced an agreement to develop and operate a Direct Broadcast Satellite (DBS) network for the ABA's nearly 400,000 members. The service, called the Lawyers Communication Network (LCN), will focus on the delivery of continuing legal information, practice-specific information, legal news and other video programming.

Conclusions

In a recent MCI/Gallup survey of 550 US CEOs²⁸, 38% said that industry newcomers – not traditional competitors – had taken the best

advantage of change over the previous decade. When asked how the newcomers had succeeded, 62% of those polled said that they had done so by profoundly changing the rules of the game. In the higher education marketplace there is a growing population of new entrants, some of whom, on the surface at least, have very little in common with prevailing conceptions of what a university is, or should be. As with many other industries, it is becoming more difficult to draw with certitude the boundary lines of the higher education sector. The convergence of computing and telecommunications and the emergence of new business ecosystems, like 'infotainment' or 'edutainment', are, arguably, harbingers of what lies in store for the higher education sector. Simple economics reveal the structural constraints on the present system. In the US, it is sometimes claimed that approximately 50% of university enrolments come from 1% of the courses offered. Further, some 50% of these high-yield courses are typically taught by adjuncts, clinical ranks, or associate instructors (AIs) – not by high-fixed cost, tenured staff. As far as teaching is concerned, it can only become politically more difficult to make the case that the rates of return from (increasingly expensive) academic staff are socially justified.

The starting premise is simple: the dichotomy between distance and campus-centric education is artificial and unhelpful. In leading-edge institutions, distributed education will become interwoven with traditional educational delivery practices. For major universities, the best defense may be offense – accelerated hybridity. The opportunity costs of not playing would be serious. Certain guiding assumptions can be made. The higher education ecosystem is changing in dramatic fashion. The forces and rules which govern market entry and positioning are also changing. There is consensus on the nature of the principal demand drivers – digitalisation, deregulation, demographics. There is emerging consensus on the nature of the generic opportunities and threats which exist. It is clear that the overall size of the market will grow – rapidly and significantly. Fifteen years ago, the pace of change was incremental; today it is transformational^{29,30,31}.

Many of the new entrants will target the continuing professional development, workforce training, and avocational segments rather than the traditional campus population. Increasingly sophisticated market segmentation will be matched by aggressive product differentiation. Competitive pricing will become commonplace, placing mainline institutions, with their high fixed cost structures, at considerable disadvantage. Consortial arrangements and trans-sectoral alliances will prove popular vehicles for cost sharing, co-development and global expansion. The number and variety of content providers and ancillary players will grow. Quality, pedigree and branding will remain key considerations. Early evidence suggests that some of the new entrants pose little short- or long-term threat to established higher education institutions. In other cases, such sanguinity may not be justified. The 'best of breed' among the new players will develop sustainable and scaleable delivery strategies. In the new world, geography and accreditation will not be enough to keep determined interlopers at bay.

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The Internet, a regional newspaper and the provision of 'value added' information

Peter Williams and David Nicholas

*The Internet Studies Research Group, Department of Information Science,
City University, Northampton Square, London EC1V 0HB.
Email: pw@is.city.ac.uk*

Abstract *The Northern Echo has long provided its newspaper in a digital form. It is now looking to use the Internet to widen its customer base and information remit. To this end two initiatives have been launched: it now provides background information to support and enhance the stories it publishes and it also runs an online reference service, which largely provides information on matters of local and national concern. This article describes and evaluates these initiatives and looks forward to their future.*

Introduction

This article describes an initiative by a leading regional newspaper, *The Northern Echo*¹, to exploit the opportunities of Internet technology to provide its online readers with a deeper and more comprehensive news information service than that possible with its paper product – in short, to provide them with an enhanced or 'added value' information element.

The Web-delivered newspaper has two great advantages over its hardcopy equivalent: unlimited space and hyperlinking – and it's these advantages that enable it to offer the 'value added' news service. Lack of space has always been the problem faced by conventional newspapers. However, when working in the electronic medium, where space is only constrained by the size of RAM on the server hard discs, the problem, while not quite disappearing, pales by comparison. The reality of the electronic newspaper is that literally thousands of pages may be posted every day without fear of running out of space. Hypertext format also makes it possible – at least if well organised – to find information with much greater ease than in the paper version (despite the additional material that has to be negotiated), and to provide easy (and instantaneous) access to relevant and related external sources of information at the same time.

Newspapers have not been slow to realise these possibilities, and online editions invariably include a 'value added' element not

found in the printed copy. US titles have gone furthest down the road, although UK titles are now catching up fast. Thus *The Washington Post* onlineⁱⁱ archives its contents on the Web, so that articles from previous editions of the paper can be retrieved on demand. Searches are free for material less than 14 days old, and \$1.50 or \$2.95 (depending on the time of day) for older material. Impressively, and unusually for the Web, the database dates back a long way – to September 1986. The newspaper also provides links to external sites, including the *CIA World Fact Yearbook* and *Yellow Pages*. Interestingly, it is still felt necessary to reinforce the link between the electronic and paper editions by reproducing a facsimile of the hardcopy front page on the Web site. In the UK, *The Guardian*ⁱⁱⁱ provides free access to the electronic archives of its Online section, albeit only going back to 1995, and *The Electronic Telegraph*^{iv}, widely regarded as the electronic newspaper others have to follow, includes publicly accessible archived football match reports, for example, from its extensive online sports section.

History of *The Northern Echo* on the Web

The Northern Echo has always been a pioneer in the field of electronic information provision. Until quite recently it was the only regional paper to produce a CD-ROM archive, and it was the first English regional newspaper to go online – in 1991 on FT Profile. This archive is

now on a Web-browser system and incorporates images as part of its holdings. The paper has recently become part of Newsquest Media Group, and this move has stimulated interest in establishing an electronic franchise to mirror the newspaper ones.

Organisation of the Web edition

The Web site has been constructed so that each page is embedded in a frame consisting of the newspaper title and logo as a masthead and option buttons down the side (Figure 1). Two main headlines with introductory paragraphs, one on a major news story and the other sport are situated in the space under and to the right of the frame. The options consist of news, features, sport, advertising pages and background. There is also an option to access information on the budget and, surprisingly, this is still being heavily accessed months after the budget itself was announced.

Generally between five and ten news stories – and a similar number of sports and feature items, are lifted from the printed paper for the Web edition. The stories chosen tend to be local, more so even than the hard copy version. This is because material from the Press Association (PA), where the paper obtains the majority of its national stories, is not usually put on the electronic site, for fear of antagonising the PA. No formal agreement has been agreed regarding use of PA material on the Web site, and so where it is used it tends to be, according to the Web editor, 'chopped up,

edited down or reorganised'. Often it is 'information already in the public domain'.

The Background option

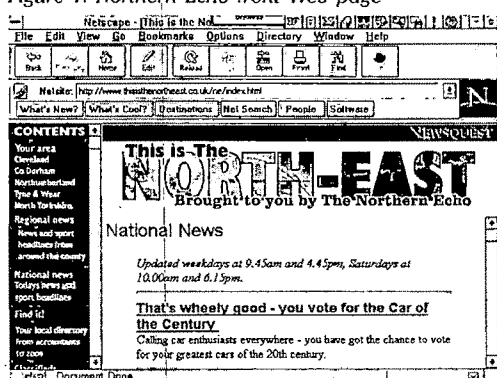
This option button, an alternative to the news, sport, features etc. buttons, leads to the major component of the 'value added' news content of *The Northern Echo* Web edition, and is the part of the Web site that primarily concerns this article. The idea behind the background section is to provide readers with additional information on the leading stories in both the Web and hardcopy versions of the paper. Activating the background option leads to a *Background Index* page. This was originally a list of contents under two main headings:

- *Long Running Stories* – a heading which leads to background information on stories or newspaper activities judged to be of long-term interest, and
- *Daily Stories* – leading to background information on the day's headline news, intended for immediate or short-term consumption.

In the cases of both story types additional material is researched to accompany articles produced by the newspaper. This is obtained from two sources: *Northern Echo's* own (private) archive and appropriate Web sites. With the latter, material is either copied and pasted onto a pre-prepared *Northern Echo* template – with an acknowledgement of the source – or links are made to the source site from the background index page. Although the former approach is preferred in that the article is imported to the site and readers therefore (importantly) stay with the paper, sometimes it is quicker and easier to simply provide an external link. This is particularly the case where the source site contains relevant graphics, or is in a format (such as PDF) that can not be easily pasted onto an HTML template.

An important point to make here is that the free public dissemination of information on the Internet (or anywhere) does not, of course, imply a surrendering of copyright, even where the source is acknowledged – the repackaging of original material under *The Echo's* own banner has therefore given some cause for concern. For this reason there is talk of compiling the background pages with

Figure 1. *Northern Echo* front Web page*



*Now subsumed under Newsquest's This is banner (an initiative taken after the article was written).

exclusively *Northern Echo* source material (i.e. from their own archive) and simply providing hyperlinks to externally produced material.

Background story content: long running stories

The long-running story selection reflects the mix of news, sport and features to be found elsewhere in the electronic newspaper. The initial entries when the background section was first compiled were:

- Durham Cricket Club news;
- The FA Cup Final, as it involved Newcastle United;
- The A66 road safety campaign – run by the paper following several fatal accidents on the North-East section of this road; and
- *The Northern Echo* leek growing competition.

This list provides powerful proof of the strong local flavour of the site.

More entries have since been added (as is outlined later). Activating any of the entries leads to a further index page relating only to that topic. Each topic is described below.

Durham Cricket Club news

The cricket index expanded rapidly with the decision to include a fixture list. Each opponent team listed became a hyperlink to files with background information on that team. This consisted of some or all of the following: player profiles, results so far, venue details (for away games) and links to clubs' own Web sites. To start with it was planned to also include match reports of the corresponding fixtures from the previous season, from *The Northern Echo* archives. However, with matches lasting a number of days, and with a bewildering array of cricket competitions, it was difficult to retrieve any meaningful articles (particularly as many of them did not mention the competition they were reporting) and this practice was dropped. It was also suggested that the final scoreboard for each game should be put on the site as the matches are played out, and PA copy was considered for this purpose after it was decided that such details would not infringe copyright.

The FA Cup final

The FA Cup Final index includes links to the files compiled on both the history of Newcastle FC and of Wembley Stadium, Newcastle's 'Road to Wembley' (match reports from *The Northern Echo* on all the games involved), and a list of fanzines. Every Premiership football club now has a Web site, and links were provided to Newcastle's and Arsenal's before the match. During the final itself a minute by minute commentary was posted onto a special file on the site, and, of course, after the game full reports and match details were posted up, together with material uploaded from the hardcopy newspaper's Cup Final supplement.

The North East region also had another football team bound for Wembley – Tow Law Town reached the FA Challenge Trophy final for non league football clubs. When this happened the Newcastle link in the main background index file was expanded to say 'The Road to Wembley, not only Newcastle United but also Tow Law'. The latter's Web pages consisted entirely of *Northern Echo* match reports charting the team's progress in the competition and other relevant material (such as an unseemly row about mascot protocol). Background information on the town was, however, very difficult to find.

A66 road improvement campaign

Material has proved hard to find for this entry. To date there is past *Northern Echo* stories – mainly accounts of the various accidents suffered – and links to the Internet sites of government road safety schemes.

The Northern Echo leek competition

The final 'Long Running Story' was not a news or sports item, but *The Northern Echo* leek competition, something the paper is promoting vigorously in both its paper and electronic editions. The background pages for this include leek recipes, pulled from Web sites and newsgroup commentaries, tips on growing leeks, *Northern Echo* stories pertaining to the competition, and information pages about the Caribbean – the first prize being a luxury cruise to this part of the world.

Background story content: rolling (daily) stories

Along with the long term entries in the background section of *The Northern Echo* Web site are background pages of relevant material on a selection of daily stories. The story headlines chosen are listed under the appropriate date, with an explanatory link to the relevant file. To give an example, in a recent story National Health Service funding for a new hospital in the region was reported as being partly raised through the Private Finance Initiative (PFI). The background offered on that story was an explanation of the meaning of the PFI and how it is being implemented generally across the Country. A sample day's entries follows:

Saturday 18th July

- Say Cheese! – while you're walking the *Dales Trail*
- Siemens' review could hit Tyneside chips plant – see *Siemens In The UK*
- IRA 'ready to give up its weapons'- *Read more: Arms handover prospect welcomed*
- Man loses fight to get back 'wolfdog' – Go straight to the *Timberwolf Information Network*
- Bravery of young man who is turning to stone – find out more about *FOP*

In each case the headline as it appears in the hardcopy or Web version of the paper is followed (shown here in italics) by a reference to further information and, underlined, a hyperlink to that information, be it a file created on a *Northern Echo* template or an external source. The entries for each background story survive for seven days. Each day when a new selection from that day's paper is added, the entries for the corresponding day the previous week are removed, although the files themselves are retained in case they are required in the future.

Background story pages: evolution

The structure outlined above has, despite the background section having only been operating for just over two months, already evolved beyond the simple concept of long running and daily story value added information. Firstly it was felt in editorial meetings that the effort of producing background files accessible for only the seven days constituting the natural

'life cycle', was disproportionate for so little representation. (It could be argued, of course, that this was at least six days longer than articles in the hardcopy version of the paper, which ended up as cat litters and chip wrappings after just twenty four hours). Also, although the stories themselves may be ephemeral, the added information was often of a reference nature likely to be useful on a more permanent basis.

Two logical changes were, therefore, agreed upon. Firstly the 'Long Running' section was expanded so that more material remained on the site for a longer period. *The Northern Echo* had been involved in fund raising to build the country's first children's hospice, and this was therefore the obvious candidate for inclusion into the long running story index, sitting nicely alongside the A66 campaign. Naturally, there were many references to the hospice in the paper's archives, and a 'Go Casual Day' initiative to raise both cash and awareness was being promoted. Past *Echo* stories, collected into a single file, with internal links to each individual entry, were posted onto the site first. Researched and added later were book lists on caring/bereavement etc.; details of the hospice movement generally, and relevant material from BBC Education. A Usenet support newsgroup was also discovered, and a link made to this for anyone wishing to share their experiences.

Local elections have been recently held, and the full results (also in the form of an external link) provided another long running entry. At the time of writing the new season's soccer fixtures have just been published (and are on the Web, of course) and plans are underway to have Newcastle, Middlesbrough and Sunderland club news in the long running story section too.

The second major change to be introduced was a *Northern Echo* Reference service (Figure 2). This also resulted from the reluctance to delete material that was of obvious long term, if not permanent, use or relevance to readers. The background material created for government news items provides a good example. One such story concerned BSE, so a 'questions and answers about BSE' Web page produced by MAFF was, using a

Northern Echo template, made into a background page. Clearly BSE information is not merely of benefit to people during the seven days the original headline remains in the 'rolling story index'. The solution was to create a series of files that would be on 'permanent' access on the site, in the form of a reference section. This initiative was particularly welcomed by the papers' editor, Andrew Smith. Interestingly, while there is much talk – and criticism – of the transient and ephemeral nature of the Web (borne out by interviews in a study by Nicholas and Williams^{1,2,3}), Smith, by contrast, saw the possibilities in the medium of creating material that readers could rely on being available.

At first the reference section included only files created for rolling stories which, at the end of the cycle, were transferred to the reference section. After two weeks these consisted of a summary of the Government's Green Paper on childcare, information about the Child Support Agency, statistics from The British Crime Survey, and other entries. The problem with this approach is that, of course, beyond the common link of each file being created by a *Northern Echo* story, there is no structure or logic about these entries. The *ad hoc* on the fly method of creation precludes this.

The next logical step, then, was to create this missing structure and logic. This could be most easily undertaken by producing a more comprehensive reference section, based not on what happens to be in the news, but on whatever might be considered useful in

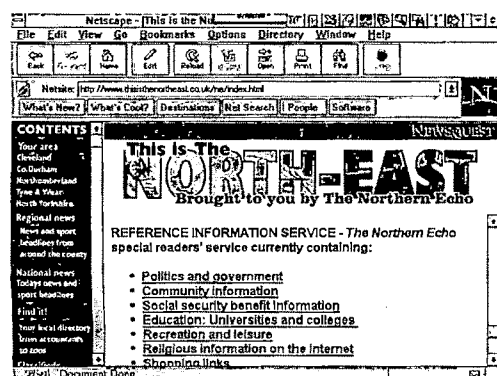
readers' everyday lives. The *ad hoc* list already included links to the Web pages of the three main political parties and to the GIS (Government Information Service). These were immediately augmented by links to over thirty political parties and organisations, central government sites, regional borough and local council sites etc. More community-relevant information is being researched for inclusion, and more detailed and expanded leisure and entertainment links are planned.

The third and latest development owes its origins to Newcastle's Wembley appearance and the compilation of the 'Road to Wembley' entry. The final itself and its aftermath clearly signalled the end of this story as 'news' – even as a long running item – especially as the local team were comprehensively defeated. Despite this, there was every chance that readers might want to consult the material on this subject later. However, if the Cup Final was no longer a 'story', putting it in the 'reference information' section did not seem appropriate either. It was eventually decided, therefore, to create a forth section (after long running stories, rolling stories, and reference) 'The *Northern Echo* Big Story Archive'. From the end of May 1998, stories considered it to be big enough for people to return to later would be transferred to this section from the 'rolling' or 'long term' sections. The value of having, to give an example, *Northern Echo's* reports and background information on the death of Princess Diana is obvious. To date the Cup Finals of both Newcastle and Tow Law; the omission of Paul Gascoigne from the England Squad, the serious rail crash in Germany, the tidal wave tragedy and other major news stories have been transferred to this section. Clearly, readers will benefit by having long term access to all the files created for the World Cup, as is planned, and it is easy to imagine a database of local/regional news being built up for open or charged perusal.

Problems and issues

Many issues are raised, both in the general practice of transmuting paper-mediated information for electronic dissemination, and in the specific formulation of the background 'value added' element that is the subject of this pa-

Figure 2. Reference service Index



per. These range from staffing and financial questions, to issues of copyright, ownership of information, and readership reaction and preferences.

One general issue that encompasses many of the topics above is that of the presumed 'level playing field' created by the Internet between both print and electronic media and between national/international news organisations and their smaller, local rivals. Various commentators⁴ have warned the bigger media players that both the ease with which Web pages can be created and the instant dissemination (cutting out the distributor) give smaller news organisations and freelancers the same facilities to deliver information as those enjoyed by larger news providers. It cannot be denied that access is equal – it is as easy to type in the URL of *The Morning Star* as it is to type 'bbc.co.uk', and therefore the readership is potentially the same. Compare this with the case of the hard copy. Many retailers decline to stock certain publications (those for which there is not a high popular demand, for instance), and minority titles also have to charge a high selling price in order to cover costs, both of which have the obvious effect of depressing sales.

Newspaper content, however, the all important ingredient, cannot be said to have benefited from this 'level playing field'. There remains the question of staff, if no longer distribution, costs. *The Morning Star*, to continue the example from above, hasn't been updated since December 1997, and the financial high-hurdle of *The Northern Echo* employing an Internet researcher working shifts leads to problems of co-ordinating hard news and background material. Lack of staffing similarly restricts the value added element – it means that background information cannot be researched at the same time as stories for the main Web and hard copy paper. Therefore, when stories are put up onto the site (at midnight) there are no one-to-one links with individual items and corresponding background material to go with them. Indeed, as things stand at the moment, the background researcher arrives the following morning and consults the sites that have been put up before even beginning to work on the material to accompany

them. As a result, the added value element is generally not ready until 2 or 3pm. Apart from the asynchronicity of this situation it also means that, unless the site is closed down briefly during the day to carry out the necessary cross linking, there is no direct link from a story to the background information on it. The reader is instead invited at the bottom of each page to 'click here for background information on selected stories'. This is in stark contrast to, say, CNN whose online coverage of the Drumcree crisis included external links to no less than twelve sites including The Orange Order Lodge and the IRA⁴, itemised alongside the actual story.

Another problem is the limitation placed on *The Northern Echo* by the use of agency material, which not only also reinforces the status quo in news provision, but actually accentuates it. By being reluctant to reproduce agency generated hard copy stories on their Web site *The Northern Echo* is reduced to uploading local news often dominated by stories of petty theft or items about local celebrities. It is a fact of life that a big national story – even if geographically located in the North East – would be far more comprehensively covered by, for example, the BBC. Needless to say, international coverage also suffers – the Papua New Guinea tidal wave tragedy was not even mentioned two days after the news broke, when BBC online and other news agencies were filling Web screens with news of survivors, rescue attempts and world reaction.

Of course, this issue is intricately connected to the problem of copyright and ownership of information raised by the paper's relationship with The Press Association, mentioned earlier. Many stories of national interest for which excellent and worthwhile background information could be researched are simply not used. Even *The Northern Echo's* (password accessed) archive is affected by the general reluctance to 'overuse' PA copy. Much material is taken from the archive to use as background information – the development of a particular story through previous news reports, how the paper covered related stories in the past etc. However, PA items that appear in the paper are not archived. A recent story in the paper illustrates the effect of this on the

background section of the Web paper. It concerned the latest activities of Lisa Potts, the nursery teacher who protected the children in her care from a knife attack, and actually included a picture showing the headline from the original report of her heroics (with the caption 'How *The Echo* broke the news ...'). The full original article would obviously have made perfect background information to the current story, but being PA copy, was not archived.

It could, of course, be argued that readers of *The Northern Echo's* Web site may only want local news and that difficulties in providing a comprehensive national or international service are of little consequence. However, like its competitors, the paper is desperately trying to attract readers to build up its Web advertising revenue. Therefore it is vitally important to try and attract the widest possible readership – a task not made easier by restricting news dissemination to local or even regional items. It is no surprise that, cognisant of this, *The Northern Echo* Web site has developed the background information concept.

We must not be guilty of exaggerating the Web's value in enhancing all local news reporting. Thus in many cases, the stories posted on *The Northern Echo's* Web site tend not to be the ones that would be enriched by further information, even if it were available simultaneously with the original posting. The following examples make the point:

- Factory Boss Found Dead: *A factory manager has been found dead in his office by his girlfriend and seven-year-old daughter;*
- Officers sort out sticky situation: *A determined suspect tried to stop police arresting him by gluing himself to his girlfriend;* and
- Riddle as woman fights for her life: *A woman was fighting for her life last night after she was found lying unconscious in a North-East street.*

It would be difficult to imagine useful background material for any of the above items save, perhaps, some information about the factory where the murder took place; a compilation of 'glue' stories from the archives and – perhaps more valuable – some first aid tips on how to treat an unconscious person. And there have to be some limits to the general public's appetite for more and more information. Easier

to research are stories about local attractions (for which tourist information can be added), sport (player biographies, past results etc.) and, with respect to crime or health, trends (for which statistics can be researched) and long term or recurring themes. The latter may include a spate of robberies or a protracted NHS pay dispute, with background being provided from feeding off previous reports.

The extent to which the lack of in-depth national news and the somewhat superficial nature of many of the local stories that are posted on to the Web site influence the number of online readers and their information seeking behaviour needs to be established. At present the only data to hand are the log files which indicate the number of 'hits' for each page on the site. These logs indicate that the rolling story background files are the least consulted pages on the site, with items of more long term interest scoring highly.

This finding leads on to a consideration of the question – what are consumers looking for in a Web publication? In fact, the figures (see *Table 1*) tell us clearly that it is sport. The sports index – by some margin – receives

Table 1. Northern Echo page impressions

Overall Web site [16:03:98 to 01:06:98]	
Page	number
Sports index	2,442
News index	1,427
Features index	688
Business index	548
Background index	292
Budget index	176
Motorquest (car sales index)	67
Middlesboro FC page	60
Background pages only [06:04:98 to 01:06:98]	
Page	number
Cricket index	28
Cup Final report	28
Wembley (Cup Final) index	27
Tow Law background page	22
Tow Law Cup Final report	20
A66 road campaign index	16

the most page impressions, ahead of news, features and business. Considering only the background material that is sought, this emphasis is even more notable. The top five retrieved pages all feature sport. Even allowing for the fact that the FA Cup final occurred during the period covered by the logs, the trend is clear. Interestingly, because decision makers at *The Northern Echo* (and, indeed, elsewhere) have better and more data on their Internet readership than their hardcopy readership, they are using the Internet data to reassess their hard-copy product. Thus at *The Echo*, on the evidence of their Web logs, they are planning to expand hard-copy football coverage. This begs the question: are the two groups of reader – and their needs – the same?

This leads to the vexed question of whether you give the reader what they want or what they need. In today's customer-driven market place it might be regarded as heresy not to give them what they want – especially when confronted – as editors are – by the possibility of their public drifting away from traditional news publications. There are some dissenting voices, however. A former president of *NBC News*, for example, likens the business of giving people only what they want (i.e. only what will sell) to 'a dope pusher's argument.' He continues, 'News is something people don't know they're interested in until they hear about it. The job of a journalist is to take what's important and make it interesting'. Nevertheless, *Time* magazine's five worst selling covers of 1995 included two on Bosnia and one on social security and, for good measure, the other two concerned American politics⁵. Piers Morgan, editor of *The Mirror*, has claimed that his paper gains 70,000 readers when putting a photo of Paul Gascoigne on the front page, and, by contrast, loses 40,000 with a political lead⁶. There is also the related dumbing-down of the news argument, which runs along the lines that, if the public exercises their very obvious choice for sport (as they do, for instance on Sky television), then that is all that they will ever obtain. No newspaper has yet moved their sports page from the back of the newspaper to the front despite the evident interest in sport, but it's plain that Web papers are more able and willing to do this.

It is true that, coming from and now playing in the North East, Paul Gascoigne has certainly appeared in *The Northern Echo* Web site many times – most recently, of course, on his dramatic exclusion from the England World Cup squad. However, availing themselves of the opportunities afforded by Internet technology, the paper is attempting to raise its profile and attract new readers through a more constructive (and educational) means than the simple formula of sport, showbiz and scandal. The reference information service is proof positive of this (although reader reaction has yet to be measured), so too is the archive of major stories being accumulated, and the paper's Web campaigning stance in respect to the A66 road improvement and the Butterwick Children's Hospice.

Conclusion

Despite all the talk of the decline in news standards and especially the role of the Web in this, it is clear that *The Northern Echo* and other regional news organisations too^{vii} are attempting to provide a broader and more pluralistic view of news events. Leading readers to the external sites of other news providers is one obvious sign of this. The free, open and uncensored access to information that has always been at the heart of the Internet is being followed even by big news organisations. *The Northern Echo's* efforts to provide community information also takes news information provision to a new (local) level. However, it is still very early days and management at the paper are looking closely at the readership of these new and pioneering pages, and there is little doubt that if the demand is not there harsh financial questions will be asked and the whole 'value added' element may be quickly dropped. It would appear that, possibly more than at any time in the past, the breadth, depth and even, to an extent, the quality of the news depends on the use the consumer makes of it. Web logs will be poured over to discern the future face of news provision on the Web.

Note

This article is based on an ongoing piece of research being conducted at City University for Newsquest North East.

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6. Morgan, P. Remarks made on *The Moral Maze*, broadcast on Radio 4, 6th June 1998, 23.00 hours.

Notes

- i) The online version of which can now be found at <http://www.thisisthenortheast.co.uk/>
- ii) <http://www.washingtonpost.com/>
- iii) <http://www.guardian.co.uk/>
- iv) <http://www.telegraph.co.uk/>
- v) <http://www.poptel.org.uk/morning-star/>

- vi) A full list of external Web links provided by CNN in its coverage of the Drumcree crisis is:
Office of the Secretary of State for Northern Ireland: <http://www.nio.gov.uk/>
N. Ireland peace talks: <http://www.nio.gov.uk/ptalks.htm>
Britain in the USA: Northern Ireland: Frameworks for the Future: <http://britain.nyc.ny.us/bis/nireland/framwork.htm>
The Irish Republican Army and the armed struggle in Irish politics: <http://www.utexas.edu/students/iig/archive/ira/history/irahist.html>
The Grand Orange Lodge of Ireland: <http://www.goli.demon.co.uk/>
Orange Watch – march opponents: <http://www55.pair.com/iowc/1998/>
What is the Orange Order?: <http://www.geocities.com/CapitolHill/1684/orange.html>
Social Democratic & Labour Party (SDLP): <http://www.sdlp.ie/sdlp/>
Ulster Unionist Party: <http://www.uup.org/>
Sinn Fein: <http://sinnfein.ie/>
The Irish News and Belfast Morning News: <http://www.irishnews.com/>
Northern Ireland Public Service Web: <http://www.nics.gov.uk/>
- vii) See, for example, the Web site of Eastern Counties Network (<http://www.ecn.co.uk/>) which incorporates business, tourist and other links onto its site.

Developing This is The North East

Peter Chapman

Head of Electronic Information Services at Newsquest (North East) Ltd.
PO Box 14, Priestgate, Darlington DL1 1NF.
Email: Newsquest_North_East_Ltd@compuserve.com

Abstract *This paper discusses the creation of a major Web site by a major UK regional morning newspaper, and highlights consequent issues and possibilities which have arisen for the company as it has exploited the new digital medium. These include offering added value to the news product by including different perspectives and opinion; regular updating, and facilitating greater readership interactivity. The financial implications of open Web access are also considered, with the importance of online advertising emphasised. The article concludes that the company are moving away from seeing information as a printed product to its publication in whatever form accrues the most revenue.*

Introduction

The aim of this paper is to provide an insight into the creation of a major Web site by a UK regional morning newspaper, and to highlight the issues which have arisen for the Company as it moves into this form of publishing.

The Northern Echo is the regional morning newspaper for the North East and North Yorkshire areas of England. It was founded in 1870 in the town of Darlington as a campaigning paper with Liberal leanings and has continued to be fiercely independent in its political viewpoint. It is unique amongst English regional morning newspapers in not being based in a city and in not being supported by an evening newspaper. Until recently it was also unique in being the only English regional newspaper available on CD-ROM and through on-line hosts such as FT Profile and LEXIS-NEXIS, which was made possible by the installation of an electronic text archive in 1988. This archive has now absorbed images as well, and is being moved from the original client-server set-up to a Web-browser based system. This early start into electronic publishing was due to the enthusiasm of a former editor, Allan Prosser, and to the support of subsequent editors and managing editors. It is from this experience that the move into publishing on the Internet has been planned.

Up to 1996, *The Northern Echo* was owned by Pearson through its subsidiary Westminster Press. However, the title is now part of a Division – Newsquest (North East) – of the regional newspaper group Newsquest Media. With the

change of ownership has come a sense of urgency as the Group seeks to stake out its claim to an electronic franchise to mirror each of its newspaper franchises.

Concept

This is the North East is one of a number of similarly branded and structured Internet sites being created to cover England by a partnership of regional newspaper publishers. The purpose of each site is to be the Regional electronic gateway to news, advertising and information for the area covered by the site. In the case of *This is the North East*, the area encompasses Northumberland, Tyneside, Wearside, County Durham, Teesside, and north North Yorkshire. Tied in with the site is a branded Internet Service Provider, the browser of which will bring up the homepage of *This is the North East* upon opening.

Practicalities

Each *This is* site is supported by the information resources of the printed newspaper titles of the partner companies. The sites are intended to be fully-funded by advertising, and therefore free to the users. Key features of *This is The North East* are the provision of news and sport stories at Regional and at individual town level; access to searchable databases of information on all aspects of life in the North-East, again at regional and town level; and access to a business information database – searchable by company name, locality, and business type – which supports a map-based

location finder. Much of this material exists on the existing Web sites operated by the company, and so is being re-branded as part of a national exercise in establishing an information franchise on the Web.

The Issues

Not surprisingly, many issues have had to be addressed in the creation of *This is The North East*. Although the Web and the printed newspaper can share text and images as source material, the Web brings so much more to the exploitation of these source materials. Thus the publisher of the newspaper has to address the opportunities offered by the Web to constantly update news and sport coverage; to cover the same event from different perspectives; to link to relevant background material; to lay out the material in different ways; and to target new audiences for the same material. Furthermore, as the Web offers a potential worldwide audience for the site, it should not be assumed that what will interest the reader of the printed product will necessarily satisfy the user of the Web site. Thus the news coverage may need to be slanted to meet the memories of ex-pats, the expectations of tourists, or the demands of inward-investors.

Similar considerations apply to the information sources. In addition there is the concern that the information should be up-to-date and accurate. The audience for a printed information product has accepted that the product is a snapshot of the information at a particular moment in time due to the time delays inherent in the production process. Will the audience of *This is The North East* be so understanding now that there is no technical reason why information on the site should not be constantly updated?

Of course, there are historical internal organisational reasons why this technical ability may not be taken up immediately. In the filtering operation that takes place in newspaper companies much 'minor' but relevant information is lost in the daily rush to meet the next production deadline. One of the challenges that *This is The North East* will throw up for Newsquest (North East) is how such information is filtered out to the Web team rather than to the waste paper basket!

As has been mentioned earlier in the article, access to the Web site is free to the user. This is, of course, different from the printed newspaper where there is a cover price. Naturally, the cover price brings in only a proportion of the revenue from the newspaper but it still lessens the pressure on advertising rates. In the case of the Web site, all the revenue has to come from advertising and sponsorship and the issue is one of what the advertiser will pay and what value the advertiser gets out of the site. A saving grace is the lower production costs of the Web site as there is no printed product to support and that the material on it is largely lifted from existing information sources.

On the topic of value for money, newspapers have built up sophisticated measures of their effectiveness for advertisers over the years. These tools have yet to be developed for the Web site and so proving real value to the advertiser is going to be problematic. Indeed, one often-quoted feature of the Web – interactivity with the users – has been noticeably (and interestingly) lacking from the users of the two existing sites run by Newsquest (North East).

Finally, there is the issue of archiving. A great advantage of the printed product is that it exists and is created a fixed point in time. This is not true of Web sites, which exist only on a server and are constantly changing and evolving. Apart from the desire to keep a record of the Web site's development, archiving has a very practical value when persuading recalcitrant advertisers to pay their bills – proof of the fleeting presence of banner ads or database entries can be required!

Conclusion

The attraction of a Web site to a newspaper company is that it appears to be a simple added-value product which can be easily bolted onto the existing product portfolio. Of course, nothing is that simple. As the ability of the Internet to deliver varied streams of information and advertising into varied consumers/receivers increases, companies such as Newsquest (North East) are having to cope with the possibility that the Internet tail will soon be wagging the newspaper dog. In other

Developing This is The North East

- words, the arrival of the Internet is forcing the company to re-think its primary function and move away from a concentration on the printed product to seeing itself as a company which produces information and advertising
- to be published in whatever format is required
- and makes money.
- *N.B. The views expressed in this paper are the author's own and do not necessarily reflect those of Newsquest (North East) Ltd.*

Internet law and information policy

Tamara Eisenschitz

Department of Information Science, City University, Northampton Square, London EC1V 0HB.
Email: tse@is.city.ac.uk

Abstract A survey is presented of areas of Internet law of most interest to information professionals. Two sets of issues are presented; general concerns of information law as applied to the Web, and particular problems of law found only on a distributed network. Because of the global reach of the network, existing legal frameworks are only partially effective. Scope is identified for both authors and users to specify for themselves what levels of organisation and protection they require and to engage directly with other members of the community requiring information and access. It is suggested that information specialists of all types are well placed to lead the development of Web resources in the context of an information society.

Introduction

What is Internet law? The creation of telecommunications networks allowing for rapid and perfect copying and transmission of information, potentially worldwide at the flick of a switch, has made the regulation of information use more urgent and more visible than ever before. Networks for database providers like Dialog, or between banks have existed for 20 years or more and carry textual and numerical information. The Internet is different in that it is decentralised and covers just about any user worldwide with no common affiliation to act as informal regulator. It was the self-regulating preserve of academic and research institutions based on a code of honour – 'netiquette', but has become a commercial tool likely to generate vast profits for its users. It is this profit motive which makes external regulation urgent as new users, unwilling to observe netiquette, and finding it insufficiently precise, struggle for business supremacy.

General information law applies to any information related activity and the development of digital services has resulted in more discriminating and well defined laws across the board¹. Internet law is the application of information law to the distributed network or World Wide Web. It concerns both the application of general information law, and specific law developed to deal with unique Web situations. Both are of interest and need to be understood in order to influence further developments.

Commercial activities

- Since much regulation is concerned with commercial activities, the tools of commerce need to be in place.

Money

- In order to make it easy to use and pay for information in small irregular amounts it is necessary to be able to make micro payments which become noticeable as they add up. Then accessing Web pages and using information will be rather like using electricity with each individual access being negligible².

- Means of automatic charging for access to information will only work if they are easy to use, unobtrusive and cost little in administration fees. The most common approach for the present is to use a credit card. This is perceived in some quarters as being insecure, but in comparison with sending a card number through the post or paying in a restaurant or over the phone, this is a reasonable and safe procedure. But it is unsatisfactory in that it is not self-contained on the Web. It requires that the number is sent, and then the user must go off line and wait for confirmation that the account exists and the money is available. An ideal system would respond immediately which requires a form of digital cash. Several systems are being developed. One possibility would be a smart card which one could charge up with money from the bank – or buy from a shop, and then push into a slot to allow the machine to deduct payments. This is like a credit card but without the delay. It can be lost

or stolen, but the money is untraceable, one loses only what is on the card at that moment.

Mondex is currently undergoing trials in Swindon and is based on a smart card of this type. Another useful approach is to develop a digital wallet. The money is coded and held in a special file, the wallet, and can be used up in very small denominations such as down to one tenth of a new penny. This could be invaluable when paying for use of small amounts of information. One only pays in 'real' cash when the amounts build up.

The interesting question is whether governments will allow these systems to come about. They could form an alternative economy and be beyond all fiscal control. It is likely that countries will start to tax information flows and they will not want to lose revenues. This may however be a distorted perception; for instance, it is feasible to charge VAT on straightforward commercial transactions and to map out exceptions and the appropriate actions to take for each of them³.

Contracts

Terms and conditions of use of either software or of information services are likely to be set out online as there is no other contact between provider and potential user. The introduction to the Website can include the contract which one must accept before going further. Contracts will be needed to buy and sell goods and services on the Web. For information users there will also be contracts for use of software or of information services or access to Web pages. Such contracts are popularly called 'click wrap' contracts in that clicking on the button signifies acceptance of the terms. The responsibility is entirely with the user to read and accept these terms, and any payments may need to be made at once, or after an approval period. However, there is no contact, no one to verify one has actually read and understood the terms, so enforceability is uncertain. If there are any ambiguities, the contract may be ruled out as unfair when dealing with the public (*Unfair Contract Terms Act 1977*).

Such contracts can be perfectly valid and binding, but there are uncertainties as to precisely when a contract comes into force –

when a message is sent accepting the terms or when it is received and acknowledged for instance. It will take time for universally acceptable rules to evolve, but the issues are the same as for any other type of contract and the points at which decisions need to be taken are readily mapped out⁴.

Security

The Internet as a whole is not a secure medium, emails can be intercepted and read by non-recipients and passwords do not seem to be very effective barriers to access. The one method that allows messages to be sent securely is encryption. The system used is to multiply two numbers together and to use the resulting number as the basis of the code. If the numbers used to create the code are large enough, then no one can crack it in a reasonable amount of time. One of the multipliers is a public key and the other is private to each individual.

Development of cryptography allows for the sending of secure business and personal messages. Also such code may be used as a digital signature, with presumably extra secure codes. Encryption has been held up by the desire of governments to be able to break codes where they deem it necessary. It seems that in Britain, although a scheme of trusted third parties will be required, the technology is sufficiently in the public domain for users to evade the licence, and having a licensed, breakable code will not be compulsory. So it is likely that compromise has won over compulsion, and use of encryption will become relatively common within a few years⁵.

Obligations

Libel

Any published work can cause offence and possibly defame its subject. On the Internet people are unwary and can be caught out. New provisions are required to clarify which of the many participants involved will be liable, distinguishing between authors and publishers on the one hand, and simple distributors on the other. Defamation includes both libel and slander, but slander is mainly concerned with the spoken word and other expressions which are both ephemeral and heard by a limited

group. Libel concerns the written word and much wider dissemination. Although psychologically users seem to regard participation in email discussion groups as the spoken word, the dissemination pattern is that of the written word, so Internet-mediated defamation is likely to be treated as libel in all cases. In Scotland there is a defence against a libel action that comments were made in the heat of an argument. This suits the nature of the forthright and emotional exchanges which can occur in newsgroup discussions. In England, this defence is available only for slander, the spoken word.

The earliest cases featured academics arguing in email based discussion groups, where it is easy in the heat of a conversation to go too far, but the large and impersonal audience magnifies any insult. The English case of *Godfrey v Hallam-Baker* (which was settled) concerns seven Usenet messages posted in 1993. The defendant worked at CERN, the European nuclear accelerator lab near Geneva⁶.

Another category of problems arises when the libel is written via the computer of an employer. Whether or not the work is in agreement with or contrary to the employer's wishes, if the employee is the author, the employer will be regarded as the publisher. As the employer is more likely to have money to pay damages, especially if a company, then attention is likely to focus on the company in an action. In 1997 the Norwich Union insurance company agreed to pay £450,000 in damages and costs to settle a dispute with Western Provident where Norwich employees implied that Western was financially unstable in emails among themselves⁵.

Concerns by employers as to what they could do to minimise their liabilities and concerns of ISPs – Internet Service Providers – as to their status led to the passing in the UK of the *Defamation Act 1996*. This modified the definitions of publisher and distributor to suit the digital age.

The *Defamation Act 1996* is a short Act. It holds that distributors, like ISPs, will only be held responsible for the contents and therefore liable if they play any part in deciding what is transmitted. If they only keep the equip-

ment in working order and administer accounts, they will be innocent distributors. However, many discussion groups are moderated in that guidelines are laid down for what is to be included, sometimes the moderator will be appealed to keep order, and if the traffic starts to decrease, that stream of discussion may be terminated. Just how much involvement is allowed before responsibility is imposed is unclear. Totally unmoderated pages are not so useful, so it is to be hoped that the courts will be realistic here.

As for employers, their vicarious liability for the actions of employees will be reduced if they can show that they have taken reasonable steps to educate employees as to what is acceptable, and presumably enforced this. So, some form of guidelines are needed, probably also a training course and a disciplinary code to enforce compliance. Then the individual employee would be responsible for their own actions.

Privacy and/or data protection

Privacy and data protection are overlapping concepts. Data protection is a particularly European term, equivalent protection is given in other parts of the world under privacy legislation. This article will use data protection terminology as it is these business related aspects that we are mainly interested in⁷.

In general terms any use we make of electronic resources leaves a trail. The current UK data protection Registrar, Elizabeth France, is very keen on the concept of self-regulation claiming that ultimately it is an individual choice what we trade our privacy for. Her job is to raise awareness so that the choice is an informed one⁸. For an informed choice one needs, apart from information, organisations and structures to inspire trust such as codes of practice about sharing data and about informing subjects of publication on the Web, and rules for labelling sites as holding personal data or as offering such data special security to prevent casual usage.

More specifically, service providers, employers and fellow users of sites may infringe privacy in various ways, either by making personal data available via the Net, or by collecting data on and monitoring the activities of

visitors to sites. Monitoring activities collate use data and payments for materials. This is particularly true for copyright payment schemes, and a vast stock of data can be collected on what sites are visited, how often and for how long. Employers conduct considerable surveillance of their workplace emails to ensure that the informality of discussions do not lead to the assumption of unintended obligations, in particular as part of contracts. They also want to ensure that employees do not conduct their private affairs during working hours.

There are two types of privacy threat:

1. transmitting personal data over the network;
2. monitoring an individual's Internet-based activities.

1. Transmission

Transmission of data to third countries is an activity regulated in most data protection acts. The new UK Act requires equivalent protection in the receiving country as in the home one, and this is a common requirement as origination in the Council of Europe Convention of 1981.

More difficult is where data collected for other legitimate purposes is then put onto the Internet without thought that this constitutes utterly indiscriminate transmission worldwide. Recently in the USA the Union of American Physicians and Dentists has filed a lawsuit against the Medical Board of California for listing physicians' address of record on their Website⁷. This is a difficult issue as naturally organisations are using the Web to publicise as much useful data as possible. One remedy is to ask permission when membership is next renewed, to put names up, and also what information each member is willing to have included. It is likely that few busy professionals will be aware of any possible disadvantages in doing this. It is ultimately an individual's responsibility to keep up to date, but certainly in Britain, the data protection Registrar sees education as one of her most important roles.

2. Monitoring

Data likely to be collected are which sites are visited and which hypertext links followed. If this is built up over a period of time an informative profile of preferences could be constructed. It is most likely to be copyright licensors who compile such data, although advertisers and electronic traders may also attempt to follow trails. Under existing data protection law, such collections of data need to be registered and a requirement of reasonableness could be that data must be destroyed once bills are paid or every few months where there is no such transaction. This would prevent a build up of data.

Employers are also tempted to monitor the private emails sent by their employees. In the USA packages have been developed to focus on chosen words or phrases and then to show that message to the boss. Because of US constitutional rights to privacy, employees have to be warned in advance of such surveillance. In the UK, interceptions on the public telephone network require a judicial warrant. This is likely to be extended to private networks given that the incorporation of the European Convention on Human Rights will give us all a general right to privacy. It is unclear whether a simple notification of surveillance would be sufficient to destroy the expectation of privacy⁵.

Access rights – intellectual property

It is the assertion of property rights in information that causes the majority of regulatory problems. Large sums of money can be at stake and this distorts the arguments. These attitudes promote exclusivity of access while intellectual creativity, and also social cohesiveness in a complex and impersonal society, depend to a great extent on readily accessible information with the user not knowing what they want until they have a look. Rights holders do license access, but this inculcates a 'need to know' attitude and hampers serendipity.

The main areas of intellectual property rights (IPRs) to consider are copyright and trade marks.

Copyright

There are expectation and enforcement problems with 'normal' copyright on the Web. Also there are some special rights which arise only on networks involving links, framing and caching. The most basic reality of copyright is that the author of text, composer of music etc., – generally originators of original works – have exclusive rights to authorise reproduction and distribution to the public. In most cases these rights pass to publishers as a condition of publishing.

Secondary rights of distributors and realisers of performances have their own exclusive rights. Book publishers, audio and video producers, the directors of films etc. hold these rights. In the UK, USA and similar countries these are also forms of copyright. In continental Europe and countries with related legal systems they have author's rights and the secondaries are protected by separate legislation grouped under the terminology of 'neighbouring rights'. The Berne Convention, the best known of the international agreements under which IPRs are organised, applies only to authors' rights.

On the Internet, works may be in a single medium as familiar in the analogue scene, but the biggest difficulties come with multimedia works. Copyright is multi-layered, rights to various geographical areas and to different media must be handled separately and have different characteristics. Given that the Internet is global and that all media manifest as a single digital bit-stream, there is a strong case for a new category of multimedia work. This has not happened as yet, rather the large companies that publish such works go for vertical integration so that they own all the rights to all the stages and aspects of a work. Smaller publishers and individuals have to struggle to locate all the rights holders.

The unique and interesting feature of the Web is that few of these general copyright considerations can apply readily in practice. If an author puts up a Web page or writes to a news group, the whole ethos of the Web and

of its founders is that the information should be used to its fullest extent by copying or linking or just by visiting and reading or exploring a site. If an owner wishes to assert rights, the most effective method is to state what may or may not be done somewhere clearly visible on the site. If permissions are easy to obtain and if required payments are simple to make – and seem reasonable, then most ordinary users are likely to follow the rules, just as they obey other forms of netiquette. Cumbersome requirements are likely to be evaded. At present such material is unlikely to be put onto the Web. It is not obvious that such material can be made to fit onto the Web if publishers do try. For example, there are a number of purely electronic journals available, but only paid up subscribers have a password to read them. No browsing is possible, no casual exploratory use equivalent to reading in a library is allowed. Therefore if an academic publishes an article in one of these apparently attractive publications, it cannot appear on a CV and presumably cannot be used in the Research Assessment Exercise (because it is not in the public domain). Once this is readily appreciated, such articles are likely to dry up and such journals will become non-viable.

All the above concerns itself with the generalities of copyright as they apply to the Web. There are also specialised issues which apply only to distributed networks. We shall now turn our attention to caching, linking and framing⁹.

Caching

This is the saving of files in local computers to ease demand on the international network. This should be covered as fair dealing as this happens *de facto* even if not approved. But it does affect advertising revenue and some copies may be out of date. It may be possible to require that the owner is notified on caching so that advertising can follow the page, and also that agreed updates must be made. All this does remove some control from the owner but probably not much.

Linking

Hypertext linking is an essential characteristic of the Web, allowing movement around a sub-

ject by following links. Nothing is copied so copyright should have no place here. *The Shetland Times v Shetland News* case highlighted a problem. *Shetland News* reproduced verbatim headlines from the *Shetland Times* to use as links so that users went straight to the stories and missed the front page with the adverts. The copyright issues were whether the headlines were works in their own right and whether the online papers counted as cable services in a different part of the Act. The settlement out of court (no precedent set) determined that the links must go via the front page and the advertising, a pragmatic victory.

So linking has not been in any way affected by this judgement, but the consciousness is there that an attack on something like advertising revenues will be fought with all means available and can have far greater effects on access to information than were ever intended.

Framing

This activity is not as widespread as linking. Frames are a way of presenting information in sectioned off little sections of the screen such as a menu and text together in a small and a large area of the screen. But sometimes a site can take information from another site and present it surrounded by their own logos or advertising. This has led to disputes. And yet there is no copying, the material in the frame is reached with link, but there is deception in that it appears as belonging to the site that shows it. All cases so far have resulted in out of court settlements imposed by the balance of powers between the parties, so there are no rules.

As with *Shetland Times* the basis of settlement is to ensure that its clear who originates the material. In *The Washington Post v Total News*, Total News was giving news from other reporting sites, *The Washington Post* being one. The settlement substituted simple links for the frames under similar conditions to that of the *Shetland Times*.

A major point here is that IT is moving fast, there are some technological solutions that can prevent a front page from being circumvented and others can prevent framing. Given the effect on the industry of a bad deci-

sion, there could reasonably be a requirement to exhaust technology before invoking the law. Also that in copyright some small loss of control over use may need to be sacrificed in the interests of guaranteed access. This is a consequence of the balance of interests so that users have some measure of certainty and security respecting access to and use of information.

Trade Marks

Clearly if registered trade marks are mentioned in a text, they must be acknowledged. Trade marks also come up alongside copyright infringement in some cases of linking and framing. These were acknowledged by acknowledging the ownership of the site and going to the front page.

A unique issue is that of site names. Web page owners would like a name that reflects their activities and business name where there is one. This is usually linked to a trade mark if there is one, but is not a trade mark itself, not being linked directly to trading. Where a mark has been appropriated by use of the first come first served principle, e.g. Harrods.com, they were in a number of cases returned where there was clearly no use to be made. But in other cases, both users had legitimate aims. A solution is to increase the number of top domain names, those like '.com'. A variety have been devised, but there are arguments as to who is entitled to impose such names, so the outcome is unclear⁵. In some cases, more sensible name choosing and an acceptance that there is still not room for all to have their first choice will cool down the excitable scramble. With lower expectations, this problem should go away, it was due to lack of awareness and to relative ease of use with small numbers in the early days.

Discussion

It is clear that electronic services allow far more minute overview and control of services than equivalent analogue based services could. Rights holders are pressing their cases concerning copyright and libel and also in other areas touching on pornography and gambling and many other issues. Users want access as free of controls as possible, but different sets

of issues push interests of control v publication in different directions. For instance the software for the PGP encryption algorithm was published on the Net as was a book about the medical condition of French President Mitterand in his last months of life. It is not automatically clear whether one or either of these should have been published, there are many conflicting arguments. Also, governments have interests in detecting and controlling crime, money laundering, pornography and gambling and also in tax revenues and in the state of each national economy.

Another issue is our intellectual history. When material is published only on the Web, will it be recoverable in five years let alone 50 or 100? Possibly a version of copyright moral rights might keep the integrity of sites and of their indexing so there is some chance of re-discovery of forgotten ideas. This issue seems quite separate, but is related because once more it implies some regulation and interference in our freedoms in the wider interests of maintaining the health of our society.

Commentators are needed to point out the issues and do so for various interest groups, but leadership is needed to try out solutions and then to implement the best approaches. The essence of the Internet is that it is a global system and therefore has no national policy leadership. The information profession is one of the most consistent and coherent groups and can exercise some transnational and inter cultural influence here. Its members work for all parties and have interests in all points of view.

Just as lawyers are seen as independent professionals simply putting their clients' cases, so there is a major opportunity for information specialists of all sorts to come forward and be seen to be representing the broadest possible array of producer and user interests in the exploitation of information re-

sources. The Internet is the most pure representative of the information society we seem to be evolving into – transnational, meritocratic and open to any sort of opportunity. Someone needs to be the disinterested champion of the information itself. If that is the information specialists role then they shall be leading and guiding great change by means of the various regulatory and social trends we have been discussing. If business of all types continues as usual then there may be no new information society after all, only another piece of technology among all the others.

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Fear and loathing in cyberspace: how mainstream US media almost missed the biggest communication story in history

Vic Sussman

Acting Editor, Talk Central, for washingtonpost.com
Email: vic@VicSpeaks.com

Abstract Shows how the US media were very slow to spot the potential of the Internet. When they finally did they proceeded to demonize it. Examples are given of this demonization. However, the US media is on its way to incorporating and integrating the Internet rather than attacking it. A younger generation of Internet and web users, who have essentially grown up with the media, will speed the end of a lengthy period of confusing and hysteria-inducing Internet reporting.

Call it one of those pivotal points in the history of telecommunications: shortly after the founding of the Bell Telephone Company, Western Union had a chance to buy the nascent business. Instead, Western Union rejected the deal. Not too many years later, Alexander Graham Bell's baby enterprise became Western Union's arch rival and eventually forced that company to abandon its involvement in the telephone business. Why did Western Union pass on the corporate deal of the century? One reason was a total misunderstanding of the future power of telephony. As a Western Union executive reportedly mused in a memo that advised rejecting the purchase, 'The telephone has no practical use'.

Mainstream American news media essentially repeated history when it stared into the face of an adolescent Internet in the late 1980s. Most reporters and editors shrugged their collective shoulders and wondered what all the fuss was about. The Internet? That 'geek' thing with computers? Just another fad, isn't it? How, given the evidence of a century-long history of development in information technology, did American news media, like that hapless 19th century Western Union executive, manage to almost totally misjudge the importance of one of the world's most profound revolutions in communication? The answers are complex and sometimes surprising:

- Consider the element of surprise. The Internet seemed to come out of nowhere. Funded by Pentagon money and established in 1969 as a means of enhancing US military involvement in the new world of computers, ARPANET (the Internet's precursor) was severely limited in scope and use. Beginning nobly if not haltingly, it enabled academic, scientific and government institutions to share data and access to government supercomputers – exotic beasts in those early days of data processing. As a relatively slow, all-text medium used initially for email, the packet-switching system that evolved into the Internet and later into the World Wide Web was certainly nothing that called for sexy headlines – unless the idea of researchers swapping information struck anyone as an exciting story.
- In the beginning, the only people who paid much attention to the infant Internet were academics, scientists, computer students and a handful of visionaries who saw the potential for a communications entity unique in human experience. But again, the growth and development was so slow, subtle and clumsy, that mainstream media can be forgiven for initially neglecting the story.
- After all, the birth of email and the first communication over a computer network didn't actually occur until 1971, and then it was only over 23 nodes – still a big jump from ARPANET's humble beginning with 4 nodes

in 1969. In 1972, the first public demonstration of ARPANET, using 40 computers, caused a stir, but again hardly enough to attract the attention of mainstream television and print journalists. A year later, global networking became a reality with the linking of England's University College and Norway's Royal Radar Establishment.

In 1976, two important events occurred, though only one caught reporters' attention: Queen Elizabeth sent email. The other occurrence was hardly noted, however. In the US, a Midwestern computer whiz named Ward Christensen created a home-grown way for hobbyists to communicate using their computers, primitive modems and telephone lines. The birth of the BBS (Bulletin Board System) went largely unnoticed, though, with all due respect, its implications for decentralised, international, personal communication clearly overshadowed the Queen's use of email. Email began blossoming in 1977, coincidentally about the same time the personal computer industry was launching. The Internet bristled with 100 hosts and email itself accounted for half of all traffic on the network. By 1984, however, there were 1,000 hosts and a subculture was beginning to form. The most significant indication of this was the birth of The WELL ('Whole Earth 'Lectronic Link'), a commercial computer conference service established in Sausalito, California. Founded by a cadre of 'appropriate technology' advocates like Stewart Brand (a founder of the Whole Earth Catalog), The WELL quickly became an electronic salon, a gathering place for artists, writers, hackers, libertarians, free-speech absolutists and scores of computer-savvy counter-culturists who enjoyed posting their commentaries and making contact with kindred spirits.

Using The WELL was not easy, however. Like the Internet (which The WELL linked to a few years later) the system relied on UNIX, an operating system once described as 'a savage interface'. UNIX required users to master arcane, DOS-like commands in a slow, asynchronous, all-text environment. Again, nothing about The WELL – except its colourful denizens and its intoxicating free-speech atmosphere – was the sort of story that fits eas-

ily into sound bite driven television reports. News of The WELL, like accounts of the burgeoning Internet, were restricted to computer magazines, the trade press and occasional feature stories about ageing hippies who had discovered the joys of computing.

Everything started changing in 1990, when Internet proliferation rocketed, hitting 300,000 hosts internationally. Projected on a chart, the Net's growth was shooting up nearly vertically, doubling in size annually, suddenly growing at a rate approaching that of bacteria. Added to this ferment was the growth of online services like CompuServe and the upstart America Online. News media began paying attention to what was being called 'cyberspace', a neologism created by writer William Gibson in his seminal cyberpunk novel *Neuromancer*¹. Mainstream stories involving cyberspace were halting, cautionary and predictable at first. Stereotypical 'human interest' stories abounded about people who met online and fell in love or found long-lost relatives. And there were scare stories aplenty about teenage computer savants ('phreakers') who hacked into telephone companies and university systems and threatened – as in the 1984 movie 'War Games' – to muscle their way into the guts of the Pentagon. Many of the stories noted, almost in passing, that the phenomenon called the Internet was catching on in certain subcultures and was a definite curiosity, much like when the CB (citizens band radio) fad briefly captured America's fancy in the 1970s. But, as one reporter noted, the Internet was largely 'boring text' scrolling down a computer screen, hard on the eyeballs and hardly the equal of television or curling up with a good book.

Like Western Union, mainstream media looked at the Internet, the boom in BBS's (whose US numbers alone had swollen to over 60,000 publicly-accessible sites in the early 1990s), and commercial online services and wondered what practical use these phenomena evidenced. Interesting feature copy, perhaps, but hardly the stuff of knockout stories.

Then came the web. In 1991, Tim Berners-Lee, a British physicist working at Switzerland's particle physics lab, CERN, gave the world something he dubbed the World,

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Wide Web, an elegant method for hyperlinking digital information. By using 'browsers' like Lynx, computer users could jump from one bit of information to another, regardless of where that material was located. Thus, a computer user living just outside Washington, D.C. could tap a few keys and almost instantly link to a university library in Wellington, New Zealand, settling back to read the Dalai Lama's Nobel Peace Prize acceptance speech. Or almost anything else, for that matter. The WWW almost overnight revolutionised the Internet, though its use – still confined to 'boring text' – was limited to true-believers and serious researchers.

Then, in 1993, Mosaic was released by the NCSCA (National Center for Supercomputing Applications) at the University of Illinois. This point-and-click graphical browser, given to the world as freeware, allowed users to see pictures and design elements and varied type faces on the WWW, the beginning of the webcentric world we now inhabit. With Mosaic's advent, US mainstream media began paying attention to cyberspace. This sudden rush to publish Net-related stories reached a fever pitch in 1995, when Netscape, Mosaic's commercial and more muscular descendant, was released as freeware, quickly becoming the industry standard. Netscape's instant popularity also attracted the attention of Bill Gates, who up to that time had shown little interest in the Internet or the web. A year later, Gates called a news conference in Redmond, Washington to announce that Microsoft was going to become an Internet-based company, producing its own browser to compete with Netscape.

Actually, suggesting that there was a sudden rush to publish cyberspace stories is a vast understatement. With the availability of relatively easy to use graphical browsers and a way to access what was becoming a huge store of web-based information – much of it initially junk, foolishness and naughty pictures – reporters and editors essentially fell all over themselves to produce copy and television reports, even if they had no idea what they were talking about. And few did. American newsrooms were essentially unprepared to deal with stories about the Internet and the

web (few reporters even knew there was a difference between the two). There were very few writers sufficiently familiar with the Internet to write intelligently about it, though that hardly stopped editors from assigning unqualified reporters. The results were predictable. In 1994, for example, Vice President Al Gore participated in the first live computer conference from the White House. Gore sat at a computer in his office and tapped out answers to questions posted in real time by subscribers to CompuServe. This one-on-one contact with citizens was historic and unprecedented. Yet who did the *New York Times* send to cover the event? A reporter who had never used the Internet and had only just obtained an email account. The *Washington Post* did no better, sending a reporter from its Style section who knew even less. The next day's stories in both papers focused more attention on the Vice President's typing skills and the slow pace of the computer conference than on the implications of such an event.

Imagine a news editor sending a reporter to cover Japan. The reporter speaks no Japanese, knows little of Japanese history and even less of that country's culture. What sort of inaccurate, biased, even stupid stories would this reporter produce? Yet this is precisely what happened when media outlets scrambled to cover the burgeoning world of cyberspace. Reporters whose only online experience was, at best, an exposure to commercial online services like Prodigy or AOL, were sent out to grapple with complex issues like cryptography's emerging importance, Internet security, and the exotic subculture blossoming in an increasingly networked world. In 1996 the Internet had swollen to 12.8 million hosts, with at least 500,000 websites.

Of course, there were also many good cyberspace reporters at work, men and women who had become involved in the Internet early on and whose reporting was not only accurate but often visionary. Writers like Denise Caruso (the *New York Times*), Jaclyn Easton (the *Los Angeles Times*), Dan Gillmor (*San Jose Mercury*), Brock Meeks (now of MSNBC), Walt Mossberg (*Wall Street Journal*), and John Schwartz (*The Washington Post*) were the exception. Much more common

were editors and reporters hurrying to publish attention-getting verbiage about this cultural and technological earthquake and the facts be damned.

American media moved from initially ignoring or dismissing the Net to a new, more destructive phase: demonization. Stories that focused on hoary issues sure to grab readers' attention predominated, casting the Internet as a veritable cesspool of sex, violence and crime. The best – or worst – example of this media frenzy was *Time* Magazine's lurid cover story of July 3, 1995, 'On a Screen Near You: Cyberporn²,' which described the Internet as a pipeline of smut running into homes and schools. Illustrated with drawings – two showed a man clearly having sex with a computer – many readers found nearly-pornographic in themselves, *Time*'s story was based on a study conducted by one Martin Rimm, a 30-year-old student at Carnegie Mellon University, in Pittsburgh. Among other claims, Rimm's study, which *Time* had exclusive rights to, said that 83 percent of all images flowing over the Internet were pornographic, often involving children, animals and violence. (In fact, Rimm had only inaccurately tallied apparently erotic file names he found in specific adult newsgroups.) *Time*'s story hit like an exploding bomb. The US Congress, never slow to latch onto a 'family values' issue that strikes fear into voters' hearts (thus inviting rescue), pounced on the Internet, quickly producing an overly broad, ill-defined piece of legislation dubbed 'the Communications Decency Act', or CDA. Tacked on to a broader communications bill, the CDA passed by an overwhelming vote. There was only one small problem: The Rimm Report was a phoney.

Ironically, the Internet itself helped to expose the truth. By linking together via The WELL, opponents of both the CDA and Rimm's study pooled their communication skills and knowledge to examine the facts. Among the leading lights of this grass roots effort were Mike Godwin, legal counsel for the Electronic Frontier Foundation (EFF) and Donna Hoffman, an expert in electronic commerce at Vanderbilt University, in Nashville, Tennessee. Godwin, Hoffman and others, including Brock Meeks, soon exposed Rimm's study as

a mishmash of doctored statistics, erroneous assumptions and outright fabrications. A complete account of this fiasco can be found in the book *Sex, Laws and Cyberspace*³.

Time magazine soon issued an apology, a remarkable event for a national magazine of its stature, explaining that it had essentially rushed to judgement based on information it had trusted but that later turned out to be flawed, an understatement. The infamous CDA was later overturned by the US Supreme Court as unconstitutional, which anti-CDA forces had characterised the legislation as from the start. But the damage had been done. Far more time was spent by media accusing the Internet of being the cybernetic equivalent of Sodom and Gomorrah than was ever spent dissecting the Rimm study or explaining the true nature of this new form of many-to-many communication.

Suddenly the Internet and the web were being blamed for everything from America's moral decline and the corruption of children to murder most foul. Television journalism (an oxymoron at best) loved these lurid stories, especially if they produced enough photographs and videotape to fill the maw of the nightly eleven o'clock news. One of the most infamous of these tales was the so-called 'Internet murder'. A woman met a man on the Internet, said news accounts, in a publicly accessible chat room devoted to what is often called 'hot chat', or explicit conversations about sex. The woman admitted that she liked rough sex and violence. A man offered to satisfy her longings, even suggesting – again in public view – that he would not only have sex with her but would kill her. Others in the chat area urged this woman to stop playing this dangerous virtual game and get psychological help. She had other plans. She left a note for her husband and drove several hundred miles to meet her would-be lover. Police found her body not long after and arrested her homicidal paramour, who was eventually convicted of her murder.

The story played widely across American media and was used by ubiquitous talk shows, politicians, religious figures and even advice to the lovelorn columnists to whip up a frenzy about the purported dangers of the Internet.

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There was only one small problem: most accounts got the facts all wrong. First, the couple met in an AOL chat room, not on the Internet itself. A small point, perhaps, but one that emphasises the news media's continuing inability to distinguish between a commercial online service like AOL or CompuServe, a private BBS, the Internet or the web. Second, the woman, a person with obvious psychological problems, willingly drove to rendezvous with a man threatening to kill her even though others online repeatedly tried to intervene. She left her husband a note that clearly stated she knew she was going to be killed. So was this murder or suicide? If the couple had met in a pub, as men and women often do, and the meeting led to sex and violence, as often happens, would there be a campaign against pubs? If they used the telephone to communicate, would the news media inveigh against the demon telephone?

Other examples abound. Americans have been repeatedly warned in print and on television to be wary about using a credit card to purchase anything off the web. The implication is that criminals can capture their card numbers on the fly and commit fraud. These warnings have had a measurable effect on would-be shoppers, one of them being to actually retard the pace of electronic commerce. News accounts have frightened many people into avoiding web shopping, though it doesn't seem to bother them to entrust their credit cards to waiters who disappear for ten minutes at a time, or to relay their card numbers to anonymous voices on toll-free shopping lines. Once again, the facts don't square with the media's warnings about criminality in cyberspace. According to Dorothy Denning, an internationally known expert on cryptography and a professor of computer science at Washington's Georgetown University, there are no cases of credit card fraud linked to a web shopping site. Not one credit card theft in nearly five years of web commerce history!

Demonizing a new form of communication is hardly a new phenomenon. In the early days of the telephone, for example, many people believed it was unnatural for disembodied voices to travel through the air. Critics said the phone would eventually destroy the social

fabric because it would kill face-to-face communication and letter-writing (which it may have, in fact, though email seems to have sparked a revolution in personal communications sans vellum stationery and elegant fountain pens). Similarly, television has been blamed over the decades for everything from teenage violence to moral corruption. Take your choice – motion pictures, radio, the VCR, the automobile, and now computer communications – all have been initially vilified in their time by news media looking for stories that will stir reader interest, if not outrage. The roots of this demonization process, at least in the USA, rests in the nation's long tradition of anti-intellectualism and its historical distrust of technology. While it is far beyond the scope of this screed to fully analyse these social characteristics, some aspects can be generalised. Consider America's pioneer ethic and its notion of 'Manifest Destiny', the concept that pushed settlers ever Westward. This 'cowboy ethic', an almost divine right to dominate the landscape, pushing to the horizon, still prevails in the American psyche. The idea that action is more important than intellectuality is embedded in the American character. Thus while scientists are valued for their contributions, they are never entirely trusted by the mass mind. Neither are computers, the spawn of 'geeks' and 'nerds' and 'eggheads'. Note the way computers are depicted in popular entertainment to see this distrust at work. Many films and television dramas involving computers invariably hinge on simple plots:

- Good computers that end up doing bad things by accident.
- Good computers that go 'insane' and do bad things.
- Good people who go insane and do bad things with computers.
- Bad people who do bad things with good computers.

And, of course, there is that mainstay of science fiction – the 'mad scientist', a theme that runs from early films like 'Metropolis' and 'Frankenstein' right through to present day cinema. How many films show computers and science in a positive light? One American film that comes to mind is 'The Right Stuff', the

account of the Apollo moon mission that narrowly averted disaster. The film shows smart people – engineers and scientists – doing smart things, a rarity in popular entertainment.

The demonization of cyberspace continues in US news media, though there are signs the process is following its historical pattern, slowing down as new, initially unfamiliar technology begins its progress toward commodity status. All technology, no matter how novel at its start, eventually becomes embedded, easier to use, and finally invisible. Does anyone talk of achieving 'telephone literacy' or write popular articles about the dangers of telephony? When a kidnapping occurs or criminals use telephones in extortion plots, does the media pump out stories about the dark side of the telephone? They don't, because as time passes we learn to live with the promise and the dangers of every new form of technology. There are signs this process is in full swing with the web. Every major newspaper and television network in the USA has a website that is integrated in some way with the parent organisation. Viewers watching a news report on NBC, for example, are advised to check the MSNBC website for more details. *The Washington Post* routinely encourages its newspaper readers seeking expanded or supportive material to check its website for everything from maps to archival information.

This convergence of old and new information technology is a clear signal that traditional media, dragged kicking and screaming initially, is on its way to incorporating and integrating with cyberspace rather than reflexively attacking it. That and a younger generation of Internet and web users who have essentially grown up with the media will speed the end of this period of confusing and hysteria-inducing reportage. But no one who has studied the history of communication should be surprised at how and why Ameri-

can media, if not journalists in general, missed the boat when it came to understanding the importance and unique characteristics of the Internet and then the web.

As the late Ithiel de Sola Pool noted in *Technologies of Freedom*⁴, his seminal book published in 1983:

'Technical laymen, such as judges, perceive the new technology in that early, clumsy form, which then becomes their image of its nature, possibilities, and use. This perception is an incubus on later understanding. In some times and places the even more capacious new media will open wider the floodgates for discourse, but in other times and places, in fear of that flood, attempts will be made to shut the gates.'

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Note: Vic Sussman has been a working journalist and broadcaster for over twenty years. He has been a weekly columnist for *The Washington Post*, a senior editor at US News & World Report (covering cyberspace), and AOL's Director of Internet Programming. The author of three non-fiction books, Sussman has also written and narrated three non-fiction films, produced dozens of radio programs and written television commentary. A professional public speaker, he addresses business and industry groups on the social and cultural impact of the Internet and the web.

British political parties and their web pages

Caroline Auty

Library, House of Lords

David Nicholas

The Internet Studies Research Group, Department of Information Science,

City University, Northampton Square, London EC1V 0HB

Email: nicky@is.city.ac.uk

Abstract *The General Election of 1997 was marked by much political activity on the web. An analysis of 20 party web sites a year later on shows that most parties have kept a web presence although few are really capitalising upon the web technologies. Sites are too often stale, out of date and predictable. In no way can cyberdemocracy be seen to have arrived; the web is too often just a publishing vehicle and communication is largely one way. The smaller parties are proving to be the most innovative.*

Introduction

Aware of the success of the Internet in the US elections¹, the media at first hailed the General Election of 1997 as the first British election to be held in cyberspace. And indeed this election was marked by high levels of political activity on the web. Certainly all the three major parties had grandiose plans for the Internet especially in respect to targeting younger voters. Small parties also saw the Internet as a means of compensating for their lack of coverage in the established press². However, all too often journalists were not impressed by what they saw in the run-in to the Election. Sites were thought to be empty of content and substance, too reliant on futile messages and cheap slogans and too often containing out of date information^{3,4}. When journalists tested the alleged communication benefits of cyber politics they found it wanting. Thus Garfield⁵ emailed MPs from all three main parties about issues the average voter might be concerned with: health and taxation. However, MPs refused to be drawn to comment via email, many (60%) did not respond at all and those who did stuck to party lines. Each email sent by Garfield included a party specific footnote to provoke real cyber-debate, but again to no avail; he was wasting his time.

One year on – enough time to have come to grips with the new technology, and benefiting from the spectacular growth in Internet users during this period, how much progress has

been made along the route of cyber politics? To answer this question we set out to analyse party web pages in the period after the General Election (to see if the momentum had been maintained), and to evaluate the quality of the pages that have survived. In particular we were interested to see:

- which of the parties contesting the Election have maintained an up to date web presence since the Election;
- whether, as forecasted smaller parties would be the real beneficiaries;
- whether the Internet is being used interactively by the parties or solely as a means of information delivery;
- to determine how the Internet fits into parties strategies.

Only the official and national pages of political parties which had established web pages before the General Election of 1997 were covered. Constituency-level parties were not analysed due to their sheer number; nor were the Northern Irish and Irish parties because of the special political conditions which exist in the Province; or pressure groups.

Methodology

Sample

Yahoo UK was used to draw up the sample of parties during April of 1997. Yahoo UK was chosen as it avoided the American bias which most other search engines suffer from and its hierarchical classification scheme meant that

it was easier to retrieve all the parties with web sites. The path followed was: Government and Politics - UK - Politics - Parties and Groups. The resulting list yielded twenty parties. Both extremes of the political spectrum were included: the New Communist Party of Great Britain and the British National Party (BNP), the three main parties, representatives from Scotland and Wales (Plaid Cymru and the Scottish National Party) and smaller less well-known parties (Islamic Party and Natural Law).

Web-watching

Party pages were examined weekly to establish which parties kept their pages up to date, and which parts of the pages were better maintained. A diary was kept in which was noted any changes to the sites. This exercise also enabled us to determine whether the site was accessible, and if not why not; whether the site had undergone a major revision; which events had provoked a response on the web and which had not and whether the URL had been consistent over time or if the party had moved its pages.

Constructing the evaluation criteria

The evaluation criteria used was aggregated from a number of sources⁶⁻¹³. Headings for the broad points of the criteria were decided upon: design, navigation, search facility, images, multimedia, content, links, accuracy and bias, timeliness, accessibility, use and traffic data, responsibility and control.

Period of evaluation

This took place during the last three weeks of March 1998 using Microsoft Internet Explorer. It was felt important to evaluate the party pages while Parliament was in full swing as recesses in the past had been reflected by a lack of activity on the party pages (obviously this only affects Parliamentary parties).

The questionnaire

The role of the questionnaire was threefold: to obtain use data; to ascertain what controls party hierarchies maintained over Internet pages; and, to see how quickly parties would respond via email. The questions were emailed to the webmaster or to a suitable 'mailtos' where there was no webmaster.

Results

Design and construction of the home page

The home page is arguably the most important part of any site as it tends to be the first page encountered by web 'surfers'; hence, it should be hard hitting and sufficiently impressive to draw users further into the site. It should also give some indication of the scope of a site. Although this may be tantamount to judging a book by its cover, it is necessary to examine the efforts the parties have made in this area.

Many of the parties open their sites with pictures of the party leaders. The Labour Party home page consists of a black background with a picture of Tony Blair and the words 'the Rt. Hon Tony Blair Prime Minister and Leader of the Labour Party'. This then cleverly makes way, after five seconds, for the index page. Similarly, the Liberal Democrats have opted for an image of Paddy Ashdown surrounded by intently listening children. This is used in combination with an index to the Liberal Democrat site and also works well: an indication of the scope of the site given along with a figure people can automatically identify. The Conservative Party home page greets the user with pictures from the Mr and Mrs Hague's wedding album. Like the Liberal Democrats, images have been used in conjunction with a general index to the site.

Using the party leader to open Internet pages is an effective way of immediately identifying a party in the user's mind. However, not all parties have opted for this approach, because it only seems worthwhile if the public recognise the leader. Some have used equally eye-catching techniques. The New Communist Party of Britain (NCPB) page starts with a large, red hammer and sickle with the logo 'Workers of all countries unite'. Certainly hard hitting. Both the BNP and the National Democrats use patriotic colours throughout their sites with the BNP opening with a Union Jack. The National Democrats have a European Union flag with 'no thanks' embossed on it to welcome Internet users. Both methods leaving users in no doubt as to their respective politics, but perhaps this is reading too much into the sites as the SEP also use red, white and blue, hardly the colour scheme of an internationalist party.

British political parties and their web pages

Colours have been put to effective use on home pages and throughout party sites in general by most parties. The Scottish Conservative page opens with an outline of Scotland coloured in Tory blue, and the Plaid Cymru site uses both colours and images of the Welsh flag (white, green and red) effectively. Both the Liberal Democrat party pages examined have yellow/orange colours featuring predominantly on their pages. Red has been used by the Labour Party and also logos from their Election advertising campaigns: the 'New Labour New Britain' logo and the red rose. Similarly, the blue torch of Conservatism can be found on the Tory Party page and the yellow bird of Liberalism on the Liberal Democrats. The prize for using the most colourful page undoubtedly goes to the Third Way which have used most of the colours of the rainbow on their home page.

Happily all the parties have an index to their site on their home page. In general, most parties have made an effort to introduce surfers to their page in a way befitting to the party, but there are some exceptions. The Liberal Party has made no use of colour whatsoever on its home page: even the sun logo appears in black and white. The Liberal Party site also starts with a plug for Michael Meadowcroft's latest book. The SEP have fallen into a similar trap as the first thing that greets visitors to their site is an advert for the Fourth International pages; a link to another site is hardly the way to draw users further into your own site. Advertising on (political) web pages can be annoying and detracts from the rest of the content, so it is unfortunate that the SNP give space to Netscape, Explorer and Shockwave on their home page.

Not all parties have opted for a separate home page as such. Some have the majority of their content on the one page. The Scottish Green Party and the BNP both come into this category. For the former this is not a vast problem as their page is quite short but the BNP page needs to be sectioned up more and re-designed. The index is very long, includes almost every item on the site and only appears half way down the home page after articles about racism trials in Germany and freedom of speech on the Internet. It is difficult for the

user to get a true sense of the scope without scrolling through vast amounts of information which should really be further into the site, not on the home page. Ironically, the BNP has a message at the bottom of its web page stating that the page has been kept simple to allow the information to be updated quicker!

Navigation

If the home page has succeeded in drawing users further into a site, then there should be aids to help them navigate around. Equally, users may have accessed the site through a search engine instead of entering through the home page so signposts and directions are of the utmost importance. These may be tables of contents or indexes, back and forward buttons, links to the home page throughout the site, and a consistent 'look and feel' to the pages. Overall, the design should be functional and allow users to find what they want quickly and easily. So how do the parties fare?

Whether the site has an index or table of contents has already been covered to some extent in the section on the home page, but it may be extended. One of the best means of facilitating navigation is a site index on every page, so users may jump from one page to another without having to return to the home page. Quite a few parties have opted for this method: the Labour Party and the Conservatives, for instance. Most parties which have adopted this idea have used frames and divide the page into an index frame and a main frame where all the text appears. Some parties have gone one better than this by having a table of contents, usually in button form, down one side of the pages and the same in text form at the bottom of all the pages. The Liberal Democrats and Scottish branch of the party and the SEP all have two indexes.

Not all parties have an index on every page but there are ways of compensating for this. At the very least, every page should have a 'home' button or link or, in the cases of sites which mainly consist of only one page, anchors to return to the top. Practically all parties have followed these guidelines in some format: the UKIP home button is a picture of Big Ben, in keeping with its patriotic image. Where the parties differ is in the extent to

which they aid navigation. Some of the pages have very few anchors or directions but if the pages are quite short, this is not a problem (Green Party). However, there are some parties where much more help is needed. The BNP has already been criticised for not having a substantial index and the home page being much too long. This clearly has implications for navigation as it is difficult to find anything without copious amounts of scrolling. Likewise, the NCPB hides the majority of its content under one link entitled 'special features index'. This contains not only the shop, a user survey, Internet chat but also tens of articles and the Marxist Leninist archives. Lack of navigation aids here makes the site seem bare on first glance when in reality it has much to offer. Although the SNP is one of the parties with only a few navigation aids, it has some redeeming features: it is the only party to show the byte sizes of its links and pages.

In terms of a uniform look to web pages, the parties have not fared as well. Consistency is important not only in fostering a corporate image but it also aids navigation and reassures users in an environment where they can easily stray off site and get lost. Pages within a site should follow a similar template and colour scheme. The majority of parties have adopted a house style in terms of formatting for their web pages but colour schemes tend to vary. Even the Conservatives can be criticised here: their home page has a top and bottom menu system, each of which has different options on. However, on subsequent pages only the top menu appears. Also, most of their web pages consist of a black background with white text, an index and an image of some happy looking people, but some of the pages are blue with grey text, no image and no people. In actual fact these latter pages are relics from a former incarnation of the Tory Party page but having two styles destroys any semblance of consistency and confuses surfers. One could not imagine the Conservative Party issuing press releases on different styles of headed paper, for example.

Search facility

A search facility is another aid to navigation but one which deserves a section of its own.

The presence of a search engine can help users locate information and also help draw them further into a site. Despite these advantages, there has been surprisingly little use of search engines amongst the parties covered. Only four have a search facility and one of these does not really count: the Conservatives' 'constituency locator' is unfortunately based at the House of Commons web site and is an external service. The remaining three vary in their capabilities and the amount of instruction given. The Liberal Democrats have several search facilities, the first of which covers their policy pages. Users may search for a keyword or phrase. A search on 'education' retrieves documents, but neither 'education and Scotland' nor 'education Scotland' work although documents which contain the phrase do exist. Similarly having retrieved data about ethnic minorities by browsing online policy documents it should have been easy to find this using the search but nothing was forthcoming from the search engine. A second search facility exists on the Liberal Democrat page which covers their MPs, MEPs and councillors. It works by simply matching the words you type in. So if you input 'Taylor' it retrieves Matthew Taylor MP and another MP who attended the Merchant Taylor School. There is a handy search which retrieves contact details for local party branches if you input your post code.

A third search facility covers Liberal Democrat press archives. Although this is rather well hidden at the bottom of the current press releases, it is useful and takes users further into the site. Again, single concept terms work better than phrases but the results could be presented better. At the moment they are not in a useful order: relevancy rankings or even chronological order would be an improvement.

The SEP is perhaps the most advanced search facility as it explicitly incorporates Boolean AND and OR (the others made no mention of this though they may work) and case sensitivity. Instructions are again lacking and results are displayed 'in no particular order'. From an information scientist's point of view, all the parties need a few lessons in information retrieval and user education. The NCPB is the only other party to offer users a search facility and unlike the other three, it

does not search within the party site but is an Alta Vista gateway to the whole web, leading users away from their site.

Images

Images are one of the key features of publishing on the Internet. Not only can they add to a corporate identity, but they can also be used to convey information quickly and easily. Pictures can make a page pleasing to look at and the ability to mix text with images is one of the innovative features of web design. Conversely, sites have been criticised for over-using brightly coloured images simply for decorative purposes. The time taken to download images and their size are other issues which need to be considered.

Despite the evident advantages to be gained from using images, political parties have shown a remarkable indifference to them. In most cases, only one or two pictures have been used and these tend to be logos or appear only on the home page of a site (Scottish Greens and the Natural Law party). Other parties have made slightly more effort, but not much, and a few themes have come to light. The tendency to use images of the party leaders on the home page has already been mentioned, but some of the smaller parties have details and pictures of their leaders further into their sites. The Islamic Party has biographical details on its leader along with his photograph and Plaid Cymru have pictures and resumes of their four MPs.

Images of people are clearly worthwhile if it helps the public identify a party or put a name to a face. Even those parties without recognisable leaders can help forward the parties' corporate identity with the use of images: the Green Party's election page has a 'gif' of Big Ben surrounded by sun flowers. Other images which have been used a lot are those of flags, including the St Andrew's flag on the SNP page, which moves, and the Welsh flag on Plaid Cymru's page. The prize for the most sensible use of images goes to the two Liberal Democrat party pages. The Federal Party has clickable buttons, each with an image which represents the contents of the links. Thus the Liberal Democrat directory (of MP's) is shown by a pile of books and the 'news'

page is represented by the blaring radio. This is an obvious and simple use of images but one which has been largely ignored; few other parties have bothered with these thumbnail images which are so effective.

Other innovative images exist too. Plaid Cymru has clickable maps of Wales which show the General Election constituencies and local council wards. The Labour Party is one of only a couple of parties which has opted for images that move. Small photographs of Labour MPs flash away in the top right hand corner of the screen. The SNP page has an image of a letter which goes into an envelope. Most of the images do serve a purpose, but there are a few exceptions. The Third Way page has pictures of the Spice Girls, somewhat questioning their claim to be a serious party, in what may be the most blatant attempt to lure voters to them at the next election. The SNP comes closest to the award for over-use of images of little relevance. The pictures of their leader, Alex Salmond, and Sean Connery, one of their leading supporters, are acceptable but the advertising, the person peering over the wall in a Chad type fashion, and the link marked 'top secret' are not.

Multimedia

Multimedia is perhaps the most important feature of the Internet: its ability to mix sound, images, video and text. It is in this area that the unique features of web publishing should come to the fore; the potentials are endless. It is thus with some surprise that we have to report that only three parties have made any efforts at all in this field. The National Democrats have some live video shots in their page of external links and the UKIP home page plays a rousing version of Britten's *Young Person's guide to the Orchestra* automatically. The SNP have been even more adventurous than this and have made use of both sound or moving pictures. The photograph of Alex Salmond hides a welcoming message from him in quick time movie format, and there is also an SNP TV broadcast available in Shockwave format.

Interactivity

Optimists writing about the Internet in a political context have pointed to the potential for

increased participation and bottom-up decision making. Who needs to lobby their MP at Westminster when a simple email will suffice? The interactive features of the Internet could be used not only as a forum for debate (emails and Internet Relay Chat) but also to broaden the basis of support or even make money for a party (online subscriptions and merchandising). In fact, both William Hague and Tony Blair have branched out into this area very recently; the Prime Minister conducted a virtual interview with David Frost and other surfers and William Hague took part in a virtual 'day in the life of the leader of the Opposition'. But what have the parties done in this field?

A strange mix exists. Some parties have opened up many communication channels with the connected community, but others have missed clear opportunities to make their web sites more interactive. A few parties have done the absolute minimum: the BNP, Liberals, Scottish Green Party and Islamic Party have no interactivity save for their mailto facilities on their pages. Other parties seem not to have grasped one of the fundamental ideas behind the web: the Green Party has mounted an application to join the party on the Net, but it cannot be sent electronically to the party, it must be printed out and posted snail mail. The Conservative Party have an online bookshop but orders have to be phoned or faxed through. In a similar vein, the Third Way has subscription details for its magazine in HTML form but again it will only accept new subscriptions through the post. This is very odd as the Third Way is quite willing to dispatch emailed news bulletins to readers who register online. Other parties have either newsletters or publications which can be sent out electronically: the Natural Law party has an electronic bulletin, the Scottish Liberal Democrats can inform you by email if their site has been updated, and the SNP can email press releases on request.

Interaction is one area where some of the smaller parties have tried harder and been more innovative than the parliamentary parties. The SEP has an online feedback form which is a kind of post-election questionnaire. Similarly, the NCPB has a user survey mounted and also asks readers to submit electronic reviews of its features. These, it is stated, may

form the basis of a 'future opinion page' – presumably if respondents are not too critical of the party. The NCPB also has facilities to support 'left politics chat' but this is chat between users rather than party leaders and users, and there is a disclaimer protecting the party from anything that might be published during the chats. Continuing in this way, the National Democrats have two unique interactive features. The first is a 'political profiler quiz' which asks users to select from a list of replies to rather questionable questions and then creates a profile from the submissions. The second is an 'international cost calculator' which, when activated, shows a rolling total of how much money Britain sends abroad which could, apparently, be put to much better use here. Although the content may be distasteful, these are certainly original features.

Most of the parties have methods for obtaining feedback on their sites. This not only includes the omnipresent mailtos but some parties have extended this concept by including online surveys and forms. The NCPB has its user survey and Plaid Cymru has a 'guest book' where visitors to the site can leave comments. All three of the major parties have facilities for either joining the party or just contributing to party funds, using interactive forms. The Labour Party even sells merchandise (mugs, T-shirts) electronically, whereas people wanting to buy a William Hague style cap can only view the product online. Unfortunately, when the pages were checked many of the interactive links were not working: the Liberal Democrat's membership form link was down as was the UKIP's and the SNP's and the Third Ways. Even when the parties have tried to encourage two way communication, technology seems to have thwarted their efforts.

In terms of mailtos, some parties have gone to great lengths to encourage communication and participation. As previously mentioned all the sites have at least one mailto, but others have surpassed themselves. The SNP has email addresses not only for its MPs and MEPs but also office bearers, staff and the NEC. Likewise, Scottish Liberal Democrats have over 80 people contactable via email in their online directory. This includes MPs,

spokespeople, and local party representatives. Some MPs have allowed private email addresses to appear on party pages.

Subject coverage

How much – and what – information a site contains is obviously important. This analysis makes particularly interesting reading as this is one area where some of the smaller parties lead the way.

The BNP probably has the greatest content of all the parties analysed, though it is not easy to establish this from the home page. The BNP site contains several unique features not seen on any of the other party pages. It is following the trial of Nick Griffin and also the so-called Carile Two. These features are kept up to date. The BNP page also has numerous full text articles which cover a variety of topics, all with a Nationalist slant. Letters from followers are mounted along with reviews of new books and snippets from the national press. The anonymous editor writes a monthly editorial while there are quotes, books, brickbats and bouquets of the month. Past editorials are archived on site. The site also includes a list of approved music and a poem by Rudyard Kipling. One of the links off the site leads to a nationalist site where 'thoughts for the day' are added daily.

Even parties with small Internet sites have succeeded in producing some content to further their cause. The Green Party has run Internet campaigns on school meals in Oxfordshire, xenotransplantation and genetically modified organisms. It also has three manifestos online, more than some of the Parliamentary parties have managed. The Natural Law party has only a few pages on their Internet site but it contains a fact sheet on natural law, their manifesto and recent campaigns. The minimum a party might be expected to include would be a few policies, a manifesto and a page of links with maybe a few details on the leader thrown in. This is basically what the Islamic Party have done, along with the Scottish Greens.

In terms of content, the two main political parties have surprisingly similar web pages. Although they can all be praised for having extensive sites with lots of details on MPs, staff,

contact names for various things; in terms of real meaty content, their sites are lacking. Until recently, the Conservative site consisted of lots of data on party organisation, how to subscribe, press releases and people, but it was lacking on the policy front. Even the last manifesto was absent from the page. Since the evaluation took place, various campaigns have been run on the Internet but prior to this it was a very stale site. Much the same can be said for the Labour Party. Although a few policy documents are included, most of the content is in the form of short snippets/soundbite rather than full text documents or online campaigns. The Liberal Democrats fare slightly better with their policy database and beliefs listed online. All three major parties lack the articles, book reviews and archives seen on some of the other party sites. Even the press releases do not go back far.

Although the smaller parties seems to have made greater efforts to project their aims via the contents of their respective sites, sometimes the design features let them down. The BNP page may be the most extensive but it is a badly designed page and it is impossible to see the true extent of their efforts without scrolling and persevering. 'Would a user persevere?', is the question which must be asked? In a similar vein, the SNP site is ideal for serendipitous browsing but for a user who knows exactly what they want, it must be akin to searching for a needle in a haystack. The NCPBG can also be criticised here. In some senses it is difficult to separate design features from the content as they are evidently so closely related.

External links

Some aspects of links have already been covered in the design section, but others remain to be analysed. In terms of content, links can reveal much about a party. Those that evaluate or annotate their links can be seen to have spent more time on their web pages, and also be seen to be doing that bit extra to help users locate the information they require. There should also be a balance between content and links: the Whig Party site in its previous incarnation consisted solely of three links (all to the same mailto) and no content.

British political parties and their web pages

In terms of annotated links, few parties have made any effort at all in this sphere, choosing instead to let readers guess where they might be going based on occasionally unhelpful titles. The SNP even has external links off its home page which are not labelled as external and serve to take the user immediately away from the site. The SNP is also the only party to show the byte sizes of its links, which is helpful as it indicates how long it might take to connect elsewhere. The Third Way wins the prize for most extensively annotated links. Its links receive whole paragraphs of explanation, which is just as well as the mix is rather esoteric: links to a GK Chesterton site, the Agrarian Society and a page based on Belloc. Why these links have been chosen is not clear.

Where parties link to is also revealing. The three main parties seem to have very few external links apart from links to constituency associations, party offices, youth wings, and web site hosts. Their sites are very inward looking. Sites which reflect other wings of the party or anything but the official line are given no credence. The Liberal Democrats have links to the different branches of the Federal party, the Green and Lesbian and Gay wings, but that is it. The Tories point to their youth wing and not much else and Labour links to its media centre at Millbank, Labour International and the COI for press releases. The smaller parties have been more open (or less competitive) with their links and often link to web pages and even other parties that share a geographical or political commonality (i.e. green or Scottish). The SEP links to other members of the ICFI, and the Natural Law party connects to various other natural law and transcendental sites around the world. The Scottish Greens set of links is one of the major components on their page and they link to various green organisations (CND, Anti-MacDonalds) and also other small Scottish parties. The SNP and Scottish Greens have reciprocal links, which is something one could not envisage the Labour Party and Conservatives ever agreeing to.

Other parties have been more predictable with their choice of links: the NCPB points to Communist organisations around the world,

along with trade unions and progressive groups. Any sites which do not fit into these categories are in a section helpfully labelled 'other'. The BNP links to national fronts abroad and revisionist history sites, but also the Referendum Party and general British politics sites.

Dead links

This refers to the presence of *external* links which do not connect. The existence of dead links reflects poorly on the overall management of a web site as all links should be verified on a regular basis. There is nothing more infuriating for a web user than to come across a seemingly ideal site which cannot be reached.

Several interesting facts came to light during this part of the evaluation. The first was the sheer number of external links some parties had, particularly the smaller parties. The SNP has around 91 external links, the NCPB about 98, and the Greens have 56. The worst offenders for dead links were Third Way (71% dead), NCPB (38%) and the Liberals (38%).

Authority and bias

Authority of web sites is something which justifiably receives lots of attention. In this regard we checked whether: somebody admitted to being responsible for the site; authors were clearly marked and contactable; contact details were given for Party leaders and staff. Bias is normally something which detracts from the authority of a site but is to be expected in a politicised environment and it is more helpful to look for the presence of negative bias such as criticism of other parties and unfounded claims.

In terms of authority, some of the parties have been much more open than others. The Parliamentary parties overload their sites with contact details of various people. The Conservatives have information on the composition of the Shadow Cabinet and structure of party organisation and copious mailtos for constituency parties, the Chairman, the Leader, student branch, and European MPs. Both the Labour Party and the Liberal Democrats have a similar structure to their pages with biographical details on MPs and various

party officers and staff. Some MPs even allow parties to advertise their web pages or email addresses. Plaid Cymru and the SNP also follow this pattern as do the Scottish Liberal Democrats. The SLD page has the most extensive email directory of all the parties and even includes a special section on their webmaster.

Even some of the smaller, single issue parties furnish details on their leaders, officers and webmasters, all helping create the image of a credible web page. The Scottish Greens only have a very short home page but it clearly states who created it (there are mailtos for both creators), the address of four regional offices is given and details of the Professor who translated the page into Gaelic. The Liberals are another party which give details on their webmaster, what PC he uses and which HTML editor. They are also one of only a couple of parties to copyright their pages.

Some parties have been much less forthcoming. The National Democrats have links to their host site but no people are actually named on their site. Addresses are provided but they are all PO boxes. Similarly, the four mailtos have no name attached. Much the same applies for the BNP which is similarly anonymous; both sites lack any information at all on their respective leaders, not even names are available. Not all of the articles on the BNP site have authors attached and there are no details given on the authors named. Not all the far right parties fit the stereotype. The Third Way has details on four of its officers and all of its articles have an author attributed.

Eschenfelder¹³ suggested that parties should adopt a 'professional tone' at all times and this means not succumbing to 'humour or chit chat'. Strong language should be avoided – although some might argue the Internet is a more relaxed and informal communication channel and this might be reflected in the content. Not surprisingly, some of the extreme parties have used strong language: the National Democrats describes the British Government as an 'elective dictatorship' and the EU is regarded as committing 'economic blackmail'. The BNP talks of a 'Lib-Lab-Con conspiracy' and also manages to

combine poor humour with opinion. Having listed links to some Parliamentary Nationalist parties around the world, it states, 'none of the above are racial nationalist sites. Their commitment to multi-racialism may offend some readers.' The NCPB falls into a similar category with its choice of language and articles on 'Oil imperialists bleed black gold dry' and 'the Agony of Sri Lanka'.

Although one can criticise the parties for attacking each other, using strong language and filling their web pages with opinion, this is very much what they do in real life, as any cursory glance at an election manifesto, press release or even *Hansard* will show. Most recent elections have tended to concentrate on the other sides shortfalls rather than one's own qualities and this attitude is very much reflected on the web. The 1997 General Election campaign saw the Tories use the infamous devil's eyes poster to discredit Labour while the 1993 election was renowned for its negative campaigning between the two main rivals, culminating with the so-called War of Jennifer's Ear. Some parties do emphasise positive issues on the Net: both Liberal Democrat parties have adopted a more professional approach as do both Green parties, the Natural Law party and Scottish parties.

It is difficult to distinguish fact from opinion in an environment where there is no culture of citing references and so much of the content is slanted in any case. Basically, a fact can be described as raw data, or content which has no added value. Thus facts on political web pages might include a list of MPs, details on the structure of the party, aims and objectives, contact numbers, and simple policy details. Any information which has had value added to it in some way counts as opinion. Obviously, this definition is not watertight as a party might state its policy on education in a factual way and then turn this into opinion by suggesting that this policy is much better than the one offered by a rival party. The NCPB article on 'Oil imperialists bleed black gold dry' contains facts but the opinion and strong language added detracts from the authority to an extent. The balance between fact and opinion is hard to quantify but does reflect the reliability of the information.

In terms of content, the parliamentary parties have very dry and stale content which tends to be factual in nature. As previously mentioned, there really is very little substance to some of the pages. These sites lack the articles and reviews that are present on some other party sites, but as their content is largely factual it is therefore more reliable. Conversely, some of the smaller parties have much more meaty and controversial content based more on opinion. Opinion is inevitably going to detract from the reliability of the content, though these parties should be praised for offering pages of more substance to the public. How much opinion detracts is difficult to ascertain so perhaps the best approach is to weigh up all the factors which affect the accuracy of party pages. Thus pages with lots of opinion submitted by anonymous authors with no contact details come off worse than those with more moderate content. The SNP probably has the most content which is factual in nature.

Timeliness

The currency of information mounted on the Net is of the utmost importance. During the Election campaign there were unprecedented levels of political activity on the web, with the Labour Party mapping out Tony Blair's every move and both the Conservatives and Plaid Cymru promising to update their news pages at least twice a day. However, it is not only General Elections which can provide the stimuli: politics is a dynamic sphere where by-elections, leadership contests and events in Parliament might receive attention on the net. Even those parties without parliamentary representation can comment on actions taken by the government which impinge on their specific interests (Green politics for example). To some extent the momentum established by the Election has been maintained by some of the parties. For others, even the Election passed by without so much as a mention and their Internet pages have been in a permanent state of stagnation ever since.

In general, the parties have been very poor at dating information on their pages and dating the pages themselves. With the exception of press or news releases most of the information mounted is undated, making it

difficult for users to see what has changed since they last visited a site and how current the information is. Some parties have used 'new' tags to indicate a recent addition to the site but even this is problematic. The weekly observation of web sites has shown that often these tags are an unreliable indication of currency. The National Democrats international cost calculator and political profiler quiz have both been on the 'what's new page' since before the General Election. Similarly, the BNP regularly updates its page of articles but never removes the 'new' tags from older information. A very few parties have dates of publication on some of their text, but this does not reflect favourably. The SNP has a very extensive archive of text files but they all date from 1995 and 1996, so some of them are three years old.

Three or four parties have made virtually no changes to their web sites during the evaluation period: the Whig page existed until the end of 1997 (when it disappeared) and consisted solely of three mailtos for its whole net life. It has since reappeared. Likewise, the Liberal Party, Islamic Party and Scottish Greens sites have remained largely untouched. The Islamic Party failed even to mention the Election on its site. Other parties can be said to occasionally update their pages, but on the whole the core information has remained unaltered. The Green Party have a quarterly newsletter which is updated eventually (Autumn 97 is the current issue, with no sign of Spring 98 yet), and it adds to its list of campaigns very rarely. The SEP and the Third Way also follow this pattern.

In fact, nearly all the parties never change their pages except for press releases and newsletters or magazines. Plaid Cymru only ever updates its press release and news section, the same goes for the Scottish Conservatives and the SNP. The larger parties fair slightly better. The Lib Dems keep their press releases bang up to date but also run special web pages following their bi-annual conferences. The Tories have press releases but also run extra campaigns as necessary.

All parties were slow to update their web sites in the period immediately subsequent to the Election. The Conservatives still referred

to John Major as the Prime Minister long after the Election was lost. Similarly, the Labour Party page announced their victory but MPs biographies remained unchanged until the end of June: the Shadow Cabinet had actually become the Cabinet but this was not reflected on the Internet. Labour did eventually update its information but the Liberal Democrats were remarkably slow, yet they describe themselves as being the most connected party. From May onwards they promised a full list of their MPs but this did not appear until November.

Other examples of out of data information which was not removed include the Conservatives 'Just say no' campaign against Devolution, which ran into late September, and the SNP which continued pushing its candidate for the Paisley by-election well into the New Year when the election was in November. The Liberal Party page still refers to the Labour Party as 'the official opposition party in the UK'.

There are, conversely, examples where information has been uploaded almost in real time. This surely reflects favourably on the web as a medium for communication. The Conservatives mounted William Hague's speech to the CBI in November the day he spoke and the Shadow Cabinet reshuffle was covered on the Internet the same day the posts were allocated (1st June 1998). The three major parties have always mounted their conference information quickly, none more so than the Labour party which had the mornings' decisions on the web by 4.30pm the same day during their October conference. Likewise, the three main players gave their respective opinions on the Budget on the web almost as soon as Gordon Brown had left the dispatch box, although the Labour Party information merely pointed to the Treasury's site.

Accessibility

Regarding access to web pages, parties presumably want as much exposure for their information as possible so it is in their interests to make it as accessible as possible. This includes not only having a reliable server and connections, but also making sure the data is available in widely used and accepted formats. This does not prohibit the use of the lat-

est technology it just asks that consideration be given to users reliant on older technology and alternative formats to be provided as required.

The weekly observation of the parties proved invaluable in providing data for this section, and in general the parties have fared well. Almost all the parties have been accessible nearly every week. The exceptions are the Whig Party and the Referendum Party. The Referendum Party ceased to exist after the death of its leader and source of funding, Sir James Goldsmith. The Whig Party did disappear for a long time but has recently resurfaced in a slightly revised form.

Use and traffic data

One feature of the Internet is the ability to log access data: who looks at web pages, at what time, from which domain, how often and even with which browser. Such information could be useful to a political party in helping market their Internet site. It was assumed that all parties would keep some statistics, at least covering how many times their site is accessed in order to justify its existence. However, the results of the questionnaire did not support this supposition. Out of the six parties which responded, four admitted they did not gather statistics. It is therefore not surprising that none of the parties analysed specified a target audience for their web site. Out of the three parties which do log site access, one was unable to supply details as the only way data was monitored was through the counter on the home page and although this existed, presumably nobody ever paid any attention to it. Two parties which do log site access are the Islamic Party and the New Communist Party, two of the smaller parties. The Islamic Party stated their site might be accessed 85 times in a typical week, and the NCPB thought they averaged 1100 visits per month.

In terms of the number of emails received by parties, the NCPB leads the field with over 1000 emails per month, the SNP was some way behind with 400 mails per month. Both the Islamic and the Scottish Conservatives had around 100-120 per month, but the Islamic Party figure did not include subscriptions. The Scottish Liberal Democrats webmaster stated

that their site has so many mailtos it was impossible to count the number of emails received in aggregate per month; a favourable reflection on their site.

The results for mailing lists are much more promising, suggesting that online communication does exist and in some cases thrives. Out of the six parties who responded, only one (Islamic Party) does not offer an online newsletter of some description. Both the SNP and NCPB were forthcoming: the former's email newsletter having over 500 subscribers and the latter 200 members. The Scottish Liberal Democrat's newsletter does have subscribers but the party was not prepared to be more forthcoming than this. Both the UKIP and the Scottish Conservatives email updates and briefings to people 'within the party', they were the only parties to state explicitly that their emailing service was not just for interested onlookers, the other parties seemed more flexible.

Responsibility and control

The Internet and email have both been touted as decentralised methods of communication and linked to various anti-establishment causes. The lack of control over the Net as a whole has been cause for concern in many high places, including the US Government. In terms of parties, it was thought web pages would be treated in the same way as press releases or any communication, and thus closely monitored. It was therefore disappointing that the Labour Party did not reply to the questionnaire (though perhaps not surprising) as it would be interesting to see how 'on message' party emails are and who decides upon the content of their Internet site.

From the parties that did reply we learn that few parties employ a full time webmaster. Judging by the responses, most web editors are in fact employed by the party in another capacity or are volunteers. This may explain why many of the sites have been designed simply and lack technological features like Java applications or even multimedia. Most of the parties also stated that although an individual may design the pages, a party group approves them. The SNP have an Internet Support Group which is responsible for the design

and the content of their pages. Similarly, the Scottish pages are designed by a volunteer but the Party must approve the design. The NCPB has a single web designer but he stated he would change the design if he received negative feedback from the party.

In terms of the content of party pages, it is not surprising the party hierarchy has a hand in deciding upon this. The Islamic Party's content is taken from existing party documents and 'general issues are reviewed by the party's decision making structure'. The content of many of the party web sites suggests that this is a common trend: for example, the Labour and Liberal Democrat web sites consist mainly of existing documents (press releases, manifestos) converted into HTML. In fact, all parties which responded stated that all web pages were subject to party approval – in the case of the UKIP all content is 'chosen and vetted by the leader'. The most revealing answer was given by the NCPB: their web editor stated that he used to have sole responsibility for all aspects of the site but since more NCPB members were getting connected, the Party had taken more interest in the web and he was increasingly subject to more party control.

Conclusion

More than a year since the 1997 General Election out of the 20 parties selected from the list on Yahoo in April 1997, all but two have maintained a presence in cyberspace. However their sites are often out of date. There are some examples of real-time updating – the Budget and responses to it were published on the Internet the same afternoon. But there are too many examples of out of date information remaining on the web long after the sell by date. 90% of party web sites remain unchanged from week to week. With the exception of the BNP, most parties just update their press releases. The pages which have changed the least during the evaluation period are the Islamic Party and the Liberal Party.

At the time of the Election it was thought that smaller parties be the big beneficiaries. Indeed some of the smallest parties in terms of members and seats contested at elections have the most content on their web sites. In

terms of the sheer amount of data mounted, the BNP, NCPB and Third Way have the most. None of these receive much attention from the press, except in quirky or negative news items. Conversely, the Labour Party has some of the driest content among the parties analysed. Until recently when the Conservatives started running campaigns on the Internet their site was very similar to Labour's.

However, there are also examples of small parties which have not made any extra effort and whose sites are rather stale: Scottish Greens, Liberal and Whigs. And there are also parties with a large following and more substantial content: the SNP fits into this category. Without exception, the unique features found on party pages all belong to smaller parties, such as the Marxist-Leninist archive of the NCPB, the political profiler quiz and cost calculator of the National Democrats and the diverse articles of the Third Way.

One oft-quoted benefit of the Internet is its interactive abilities. It is these features which have led optimists to talk of the emergence of cyberdemocracy or at least a broadening of the democratic process. In this respect however, the parties have not fared well at all. Few parties have any truly interactive features on their web pages, apart from mailtos, and judging by journalists efforts and our own email questionnaire, it is difficult to elicit responses over the web. Parties have certainly no online debates, voting or opinion polls.

In other areas where clear opportunities to promote even basic interaction exist, they have not been taken. The Conservative Party's publications can be viewed online but orders cannot be emailed to the party. Some parties have online membership forms which have to be printed out and posted snail mail. This does not suggest that the Internet has heralded a new era in political communications but that it is another means to broadcast to the electorate. The type of document found on party web sites (manifestos and press releases) tends to reinforce this idea. Cyberdemocracy will have to wait until the parties change their attitude and are willing to permit real two-way communication and debate. Currently the Internet is still being

used as a means of information delivery rather than discussion and debate, another means of campaigning but not listening.

The use of multimedia by the parties is minimal. Only two parties have made any efforts here: the SNP and the UKIP, though the latter's site has been revamped (yet again) and the music has been taken off. This does give the impression that the parties have failed to grasp the fundamentals of the Internet, though mounting multimedia effects does take more technical knowledge and most party sites are run by volunteers rather than professional web designers, especially the smaller parties. To be fair to the parties, there have been moves recently which suggest that the use of multimedia may be becoming more widespread: the Conservative page now includes some multimedia features, and both William Hague and Tony Blair have been the focus of multimedia campaigns.

As few parties have taken advantage of the multimedia or interactive features of the Internet, judging the overall quality of the pages largely boils down to looking at the content and design, and judging the authority of what has been written. In some senses it is difficult to separate these tenets as the BNP, for example, has impressive amounts of content but only basic formatting and few navigation aids. Here, the design of the site detracts from the content. Likewise, the NCPB has masses of content but the home page only hints at its existence. There are sites, however, which balance content and design more effectively. Both the Liberal Democrat sites are well-designed with adequate content.

How the Internet currently fits into party strategy is difficult to say. The limited evidence obtained shows that party leadership has some role in approving what is mounted in cyberspace. Though party hierarchies may have a supervisory role, there is indirect evidence to suggest that the Internet remains free of strict control. The presence of house style or corporate design exists only to a certain degree as even some of the parliamentary parties (Conservatives) have web pages with different backgrounds or different formatting – not something which would be tolerated on a press release.

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Charging for access to university-wide networked database services in British academia

Harry East, Badekale Ajibade and Kathryn Leach

Database Resources Research Group, Department of Information Science,
City University, Northampton Square, London EC1V OHB
Email: Harry@is.city.ac.uk

Abstract UK Higher Education has a well-established network (JANET) accessible to its students and staff. Its existence made it possible for a trans-university body (JISC) to sponsor the development of datacentres at various sites around the network. Through licensing agreements made with the owners of popular databases (typically marketed by commercial vendors), these databases are now accessible to the Higher Education community through JANET. Preserving the tradition of making print-based media freely available in academia, there are no direct charges to endusers of electronic sources. There are, however, considerable charges (licensing fees) entailed for the community as a whole. JISC's policy has been that, while access is 'free to the end-user at the point of use', an annual subscription is levied to each Higher Education site which provides access to these databases. In most cases this subscription is met from the budget of the institution's library and information services. The paper considers the impact of this centralised information provision on the growth of end-user services and some limitations of the current charging policies.

Background

A general principle in British academic library and information services, as in many other countries, is that *bona fide* users are not charged directly for access and use. Such services are increasingly expensive to provide but, in principle and mainly in practice, they are regarded as a central service provision. As the current phraseology has it they are 'free to the end-user at the point of use'. The expansion of electronic services, though complicating budgeting, has not in practice changed this rationale. Institutional accounting practices may vary considerably. In a decreasing number, the information resources are both provided and paid for centrally; in others there are complex practices of 'devolution' where individual departments determine the direction of spending on particular services. This may lead to rationing of certain resources¹ but such practices are relatively rare.

The arrival of commercial online host services for databases in the 1980s provided a dilemma for academic librarians. For such services, access was controlled by the charg-

ing regime which was based usually on pay-by-use tariffs. Librarians – who were responsible for settling the bills – never promoted such services, due to the dread of expensive connect time'.¹ To alleviate this dread, various charging/rationing restrictions were reluctantly imposed on end-users (or more usually their departments). This was recognized at the time as an unsatisfactory compromise: a survey of higher education libraries in 1983 showed that the higher the percentage of 'cost-recovery' in a university, the lower the number of searches per 100 users.² Moreover, for reasons of economy more than any other, searches on external commercial services were usually undertaken by library 'intermediaries'.

Not least of the advantages arriving with CD-ROMs was that they were usually supplied through an annual subscription, involving predictable budgeting. They were also designed for the end-user. The CD-ROM medium remains firmly established in the repertoire of library services. A recent study has indicated that approximately 75% of academic library expenditure on electronic database resources

is directed to CD-ROM acquisition; about half of these holdings are networked on campus through LANs.^{3,4} But this study also found evidence that maintaining this type of service is beginning to be regarded as a burden, partly because of the increase in the number of databases now available in this medium, and partly because of the lack of uniformity in compatibility standards.

Almost from the introduction of CD-ROMs, there were some observers who doubted the long-term future of the medium in the academic market. In a 1982 paper, McSean and Law suggested that – to the irritation of its many partisans – CD-ROM was a ‘transient technology’.⁵ To McSean and Law, and others, it was clear that there was about to be a significant growth in the technology of database access, particularly in terms of wide-area networking.

Development of a national policy

Several factors were instrumental in the development of a national academic policy for datasetⁱⁱ provision to academic institutions in the UK. One was the creation of the Joint Academic Network (JANET) linking all the higher education institutions in the UK.⁶ Another was that, in the late 1980s, several universities were looking, initially independently, at the possibility of mounting campus-wide databases. In a separate and simultaneous development, links were growing between the two communities of library and computer centres, and national services such as NISS and CHESTⁱⁱⁱ were developing points of contact with the library community. Eventually the various parties came together and in Laws’ words:

‘what started as a search for campus-wide solutions, finished up as a major national deal in which CHEST was able to say that it was acting on behalf of the whole library community.’⁷

The first ‘deal’ to be made was with the Institute of Scientific Information (ISI) for its Citation Index databases. The University of Bath was subsequently awarded a contract to manage the service, from a datacentre which was subsequently called BIDS^{iv}. From the outset it was an unprecedented success, as illustrated by the current number of institutions

registered to use it (over 100, with approximately 10,000 accesses per day).

Derek Law, who was closely involved in these developments, has been characteristically frank in stating that the policy was allowed to develop ‘anarchically, with confidence that the rules could be clarified later’. Of the coalition of interested parties who had promoted the service:

‘All felt varying degrees of ignorance or discomfort in unfamiliar territory, yet, equally, were willing to take decisions and spend large sums of money. They were also careful to minimise the sort of high-flown rhetoric which saw this project as breaking new ground. At most, this was seen as a minor extension of existing activity, with the role of the Computer Board^v being to bring order into a disordered scene. When it was made clear that not only was this a dramatic leap into the dark, but one that would have to be repeated at regular intervals, the Board felt the need to have an ex post facto justification for what they had done, and to establish a policy framework for what had been, in effect, a piece of naked opportunism.’⁸

The first advisory group to be set up recommended that the Computer Board continue to spend a significant sum of money on data for the next three years. The funding model adopted was the one used for ISI: participating sites had agreed to pay an annual fee to join the deal, and the notion of ‘matched’ funding (i.e. from the Computer Board) would continue to be the pattern for mainstream datasets. (For more specialised datasets, the relevant user community should be expected to provide an increasingly higher proportion of the resource.) Discussions also assumed that the network infrastructure would remain centrally funded and ‘free at the point of use’. A subsequent, and more broadly based working party provided more policy recommendations, and contained the following highlights⁹:

- the provision of common good services; for which
- access to any national service will be available to any authorised user;

- access would normally be free at the point of access;
- establishing a portfolio of datasets to cover all disciplines;
- achieving economies of scale in the provision of costly information services;
- subscriptions were to be paid by user sites, normally at a flat-rate;
- bibliographic datasets were appropriate for funding through libraries.

The concept of an appropriate portfolio subsequently raised one fundamental issue of database acquisition. One librarian suggested that there was a danger that with such a strategy 'services may be offered because they are available not because they are needed'. Another complained that 'it's rather like trying to buy the pieces of a jigsaw puzzle one by one, having been given a verbal description of what the picture might eventually look like, and without being sure that all the pieces on offer actually belong to the final picture'.¹⁰

Law reports that 'many other issues were covered such as charging policy... but these were to a degree matters of detail'.⁷ It is with the impact of these 'matters of detail' that this paper is mainly concerned.

Rationale for the existing charging structure

Most payments to contracted dataset suppliers involve: (a) one-off capital sum and (b) an annual fee per subscribing site. Charges are made to institutions to recoup part or all of the cost of each deal. There are three main elements to this cost:

- capital payment to the data provider;
- annual payments to the data provider;
- costs of running the data centre and managing the contracts.

Originally, a number of factors made it reasonable to levy a flat-rate annual institutional subscription. When a large capital cost for data purchase was provided by JISC, smaller institutions were really paying less than larger ones when top-sliced funds⁸ were taken into account. And JISC's established principle – that data is made available free at the point of use – pointed away from charging related to the level of use. One reason for wanting a service to be free at the point of use was the

hope that those within subscribing institutions would seek to gain maximum benefit for their subscriptions by encouraging wide use. It was also administratively much easier to collect a flat fee. Institutions are, however, committed for the whole period of the deal (usually five years). This lengthy obligation is disliked by many, especially in periods of financial uncertainty, however valuable the database is perceived.

Implications of the charging policy

It was recognised early that libraries would have problems with such a charging scenario. Law asserts that the committee involved 'wished to see the issue of services to endusers in general, and datasets services in particular, to be seen as an institutional and not a library issue'. Nevertheless 'the most common [institutional] response ... has been to land the library with the bill'.⁷

The policy document had stated that:

'(a) current practice in software provision is to levy charges, normally at a flat rate, irrespective of the size of institution involved;

(b) alternative charging policies might be specifically necessary for some research datasets ... usage of ISI, for instance, does not correlate with institution size.'

The group authoring this present paper has been studying for over ten years how higher education libraries are employing electronic resources for the benefit of their clientele.¹⁰ From its launch, the BIDS-ISI service provided the level of analytical data usually unobtainable from commercial services. Curious examination of the ISI usage data by the group indicated that the assertion on non-correlation of ISI usage with institutional size was dubious. We plotted the volume of use (in terms of the number of sessions with BIDS-ISI) against the annual library budget of each subscribing site. There was an undeniable relationship between use and size. We suggested that:

'flat-rate charges tend to penalise and/or exclude low-volume use institutions ... [this] approach excludes access to potential users in those institutions that

have decided for their own reasons not to subscribe.’¹¹

Figure 1 illustrates the usage of BIDS-ISI (January 1995 – January 1996) analysed by the *type* of subscribing institution. It is clear that the group of 'older' universities – more oriented towards research – are the heaviest users. With a flat-rate subscription in operation, this results in this group obtaining searches at a cheap rate, and the other institutions a more expensive one. (Under the flat-fee approach, the cost per session (use) could effectively vary from 10p to over £70 per connection.)

In fact, when BIDS-ISI usage is correlated with an institutions' overall score in the Research Assessment Exercise (RAE)^{vi} the relationship is clearly significant.¹² Figure 2 indicates that those institutions which have a high proportion of (successful) research effort tend to be major beneficiaries of the present pricing system, since high volume users obtain searches at a much lower unit cost. In the Figure BIDS-ISI usage has been plotted against aggregate RAE scores showing that the values are distributed approximately along a straight line. (Regression analysis gives a value of $R^2=0.78$, evidence of a high correlation.)

Similar high correlations were found between the level of use and the size of the re-

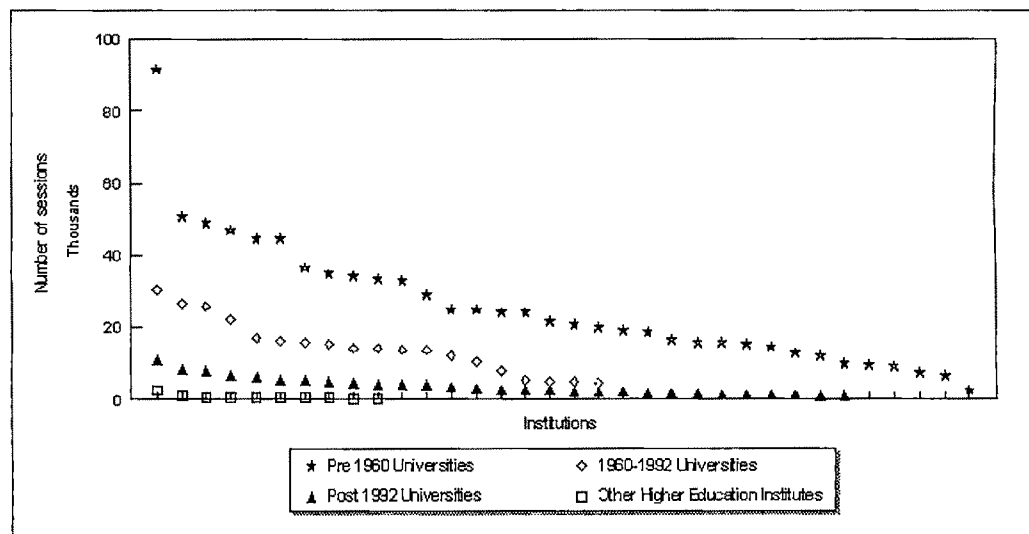
search postgraduate population (for old universities populations based on 1993/4 academic year, for new universities and other higher education institutes figures are from the 1992/3 academic year). See Figure 3.

Table 1 provides illustrative data on the access to databases available from the BIDS centre. First, the number of subscriptions to a particular database was much higher for the 'old' universities than for their newer counterpart institutions. (The apparently anomalous figures for the IBSS (International Bibliography for the Social Sciences) disguised the fact that there is no annual charge for subscription.) Secondly, the current availability to the higher education population^{viii} indicated some of the distortions of the flat-rate pricing approach. While the demand for database access by the newer institutions was not so high, neither was it negligible. Finally, the disparity in the cost per session (in this case illustrated for BIDS-ISI only) might deter potentially low-using institutions from investing in a subscription.

Research on alternative pricing models

In this exercise the BIDS-ISI database was used throughout. It was chosen because of its wide subject scope and the availability of reliable

Figure 1. BIDS ISI usage 1995/96, number of sessions by institution type



Charging for access to university-wide networked database services

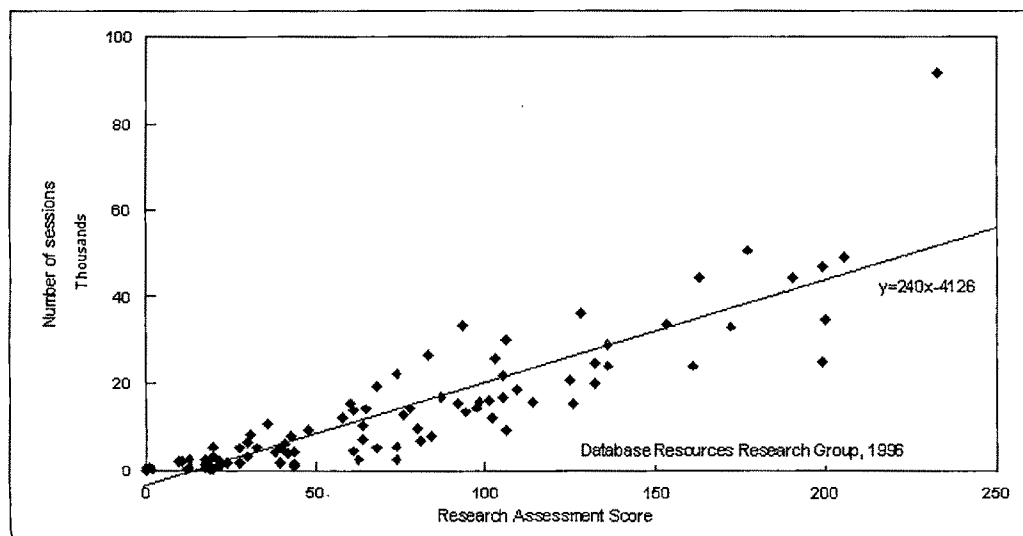
Database	Old universities	New universities	Other HE Institutions
1. Number of subscribing sites to BID-ISI January 1995 to January 1996			
ISI	55	28	10
COMPENDEX	29	12	1
EMBASE	20	0	0
IBSS	54	33	30
2. % population having access (institutions in England and Northern Ireland) ^{1,2}			
ISI	92%	71%	33%
COMPENDEX	60%	30%	6%
EMBASE	36%	0%	0%
IBSS	92%	78%	62%
3. Mean cost/session			
ISI	£0.28	£1.99	£12
^{1,2} Old universities populations based on 1993/4 figures; new and other HE based on 1992/3 figures			

Table 1. Access to BIDS databases

usage figures over a five year period of operation. Our aim was to explore a new pricing strategy by devising a more equitable form of charging to encourage wider subscription. At that time the majority of subscribers were the older universities sites. Existing subscribers

from other higher education institutions, being relatively low users, paid disproportionate amounts for access. We believed that it was unlikely that the present and expanding portfolio of JISC-sponsored datasets would attain wider distribution in the higher education

Figure 2. Relationship between 1995/96 BIDS ISI usage and 1992 Research Assessment Scores



Charging for access to university-wide networked database services

EXAMPLE 1 High usage subscription= £7,000 pa EXAMPLE 2 High usage subscription= £7,500 pa			
No. additional low use subscribers reqd.	Low use subscription rate (£s)	No. additional low use subscribers reqd.	Low use subscription rate (£s)
70	1000	65	500
40	1500	30	1000
30	2000	15	1500
20	2500	10	2000
15	3000	5	2500
		0	3000

Table 2. 2-tier pricing model

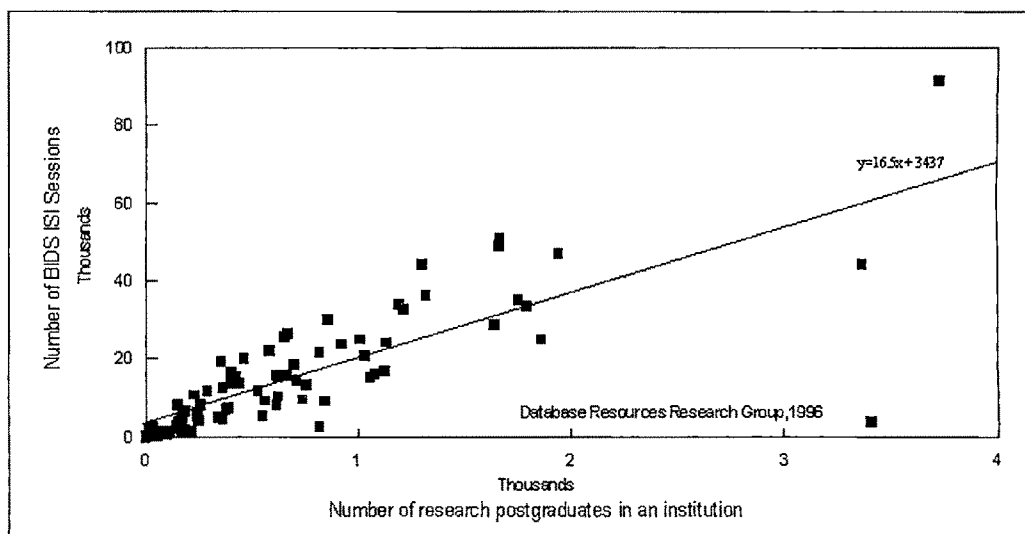
community with a pricing model that sets uniform, and relatively high, subscriptions which did not take into account the considerable variations in usage, demand and demographic differences that exist within the sector.¹³

We examined several approaches including the then recently introduced FirstSearch^{ix} 'per search' option. It allowed both existing subscribers and non-subscribers to gain access to those FirstSearch databases to which they had not previously subscribed, at a relatively low cost. A minimum outlay of £250 buys

a block of 500 searches. This permits online access to those FirstSearch databases except those classified as 'subscription' only. Institutions having an existing subscription could purchase additional blocks of searches to gain access to supplementary datasets or use them to order full-text documents online. This option appeared to be a useful addition to the *status quo* of database access.

A *tiered pricing* system was examined in some depth. The approach was to establish different levels of subscription based on dif-

Figure 3. Relationship between 1995/96 BIDS ISI Usage and 1993/94 Research Postgraduates



ferent levels of use. Although more complex than the current flat rate approach, it went some way to avoid the effects of the latter's crudity without seriously compromising simplicity. The aim was to yield the current level of income obtained from the flat-rate system. We looked at 2- and 3-tier models. The 3-tier option presented some difficulties which included the increased cost to high users. Given such a rise in subscription costs, any definition of 'high use' might be disputed.

The results from the 2-tier model eliminated some of the problems of 3-tiers, providing more promising results. This postulated a 'higher' rate of subscription which was not much in excess of current rates. Having two tiers removed the need to identify/define very high-use institutions. A low rate of subscription (of £3000 or slightly less) should encourage a significant number of non-subscribers to commit themselves to the service. Deciding the boundary of the tiers would still be problematic at the margins. If an institution's use increased significantly, and it were re-classified as a higher user, it could be faced with a large increase in costs. Nevertheless, it would be relatively easy to change the parameters in this model. For example, the required income could be adjusted, as can the subscription tariffs.

Examples of the 2-tier model (Table 2) illustrate typical outputs. In both, current subscribing institutions that use (an arbitrary) 2000+ sessions p.a. are charged at the higher rate. (There were, in fact, 80 sites subscribing to BIDS-ISI that currently fell into this category. This means that 17 existing subscribers will pay the lower rate.) It was assumed in this model that the current flat-rate income will be generated.

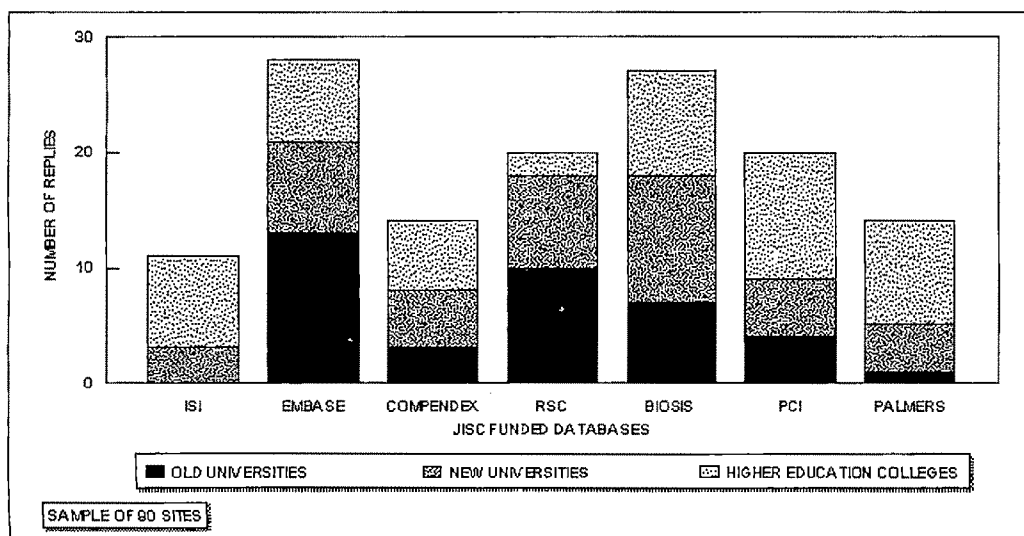
Market survey

As noted earlier, it is largely from the library budget that database subscriptions are paid. We decided to survey a sample of senior librarians in 120 higher education institutions (there was a 75% response) to try to explain the lack of uniformity of subscription.¹⁴ Seven database services were covered*. Of the several factors explored, two were prominent:

- the required subscription was perceived to be too expensive, and
- the database was judged to be mainly irrelevant to the institution's users.

Figure 4 gives a breakdown to the replies of institutions, which were *not* subscribers to a particular database, judged it to be relevant to their users, but considered it too expensive.

Figure 4. Service Relevant but too Expensive



Again, it is noticeable that the 'younger' institutions (i.e. those in which the level of use can be predicted to be usually low) had the most problems with price. This is not to imply that they did not support JISC's policy of central provision: a large majority commented on it approvingly.

Findings and recommendations of a Charging Working Group

As a result of disquiet on current charging practices, a working group of the Committee for Electronic Services (CEI) was set up in 1997 to examine alternatives to the system of flat-rate charging for databases.¹⁵ The principles adopted in specifying a future approach were (1) fairness (2) predictability (3) simple and well defined (4) encouraging use. The following are some of the possible features examined.

(a) Flat rate

Aspects of the original rationale were no longer true: many smaller institutions had become part of JISC's constituency, and the element of central funding is being removed. Experience had shown that different institutions make vastly different use of the datasets, and the community perceives unfairness.

(b) Charges related to size or funding

Charges could be based on one or a mixture of measures such as numbers of students and research staff, and the total funding or income of each institution. The disadvantages of such systems are that they take no account of different characters of institution. Use varies greatly between different institutions of similar sizes, especially but not only, with subject specific datasets.

(c) Charging by use

Directly charging according to the number of searches made was arguably the fairest method, but would probably be very unpopular with users^{xi}. It introduces dangers of institutions (or cost centres if the charges are passed down) discouraging use, or violating the principle of free at the point of use. It would be more complex to operate, especially if institutions demanded information to allow them to pass charges down.

(d) Surrogates of likely levels of use

Levels of use of current datasets correlate well with aspects like research ratings and numbers of research students. The use of such a measure to determine the charge would act as a surrogate for the level of use. A different measure would be needed for datasets with more appeal for teaching purposes. This would be easier to operate than actual levels of use, although accurate data would be needed. It would be fairer than most systems, and it is predictable. Since the subscription would be based on a measure not easily controlled by the institution, there would be no incentive to discourage use. It is not very simple.

(e) Tiers or bands

There could be a number of bands of subscription, based on size, funding, the presence of relevant subjects or disciplines, levels of use, or any surrogate of use. There is a problem of how to define the bands, and in particular doing so in such a way as to avoid scope for argument. There is also the question of which figures to use to determine bands. A possible danger is that if the bands are defined by any measure which the institution could control, especially levels of use, then institutions might take measures to reduce their expenditure, such as restricting use. The advantage of banding is that it is easier to explain and operate than any more continuously varying system.

(f) Discounts

A variant on banding is a basically flat rate system, offering discounts to institutions which are small, or lack the specific subject coverage. Though very similar to banding, the discount could be continuously varying, and might be more easily understood by the community. Discounts also have advantages as a means of bringing institutions into deals, particularly to encourage them to take early decisions to subscribe.

(g) Subject specificity

Where there is a subject-specific dataset (such as EMBASE) some measure of the specialist area might be taken into account.

(h) Other measures

Other approaches were discussed, such as charging by number of concurrent users. This would only work for very active datasets such as BIDS/ISI, as for others the average number of concurrent users per institution would be below one. It has the serious disadvantage of discouraging users if they find themselves unable to connect.

Some of the main *recommendations* of the Charging Working Group were that a future framework for charging for datasets should be as follows:

1. Each deal would have three to five tiers of subscription. The lowest tier should be around 20% of the highest. Institutions should be placed within tiers by a set of criteria reflecting institutional size, the nature of the institutions relative to the nature of the dataset^{xii} and specialist factors such as the presence or otherwise of relevant departments. Charging just at a single flat rate is not sufficient in the longer term; the rationale for it has largely disappeared. Variants of flat rate with refinements to bring in less demanding institutions are worth considering.
2. Every dataset is different, and it is unlikely that a single charging model would be appropriate for all datasets. It was recommended that the actual charging structure for each individual dataset be decided separately, taking into account any funding or other constraints placed by the data provider^{xiii}.
3. However, models should not be proliferated in order to avoid unnecessary inconsistency. There should therefore be a well-understood framework within which the charging for individual datasets should be established as defined in 1 and 2 above.
4. It is desirable that institutions should have the option to subscribe for a shorter period than five years. This should involve them in a higher annual subscription, to compensate JISC for the underwriting, assuming that five year deals are being made with the data providers.
5. More experience should be gained of offering an alternative arrangement where

less demanding sites could choose to pay by use.

Conclusions

The community had been previously canvassed for views through various user groups. In general, there was a convergence of views towards the framework of retaining subscriptions, but with a pay-by-use option. Subscriptions would vary according to the nature of the institution. (Interestingly, and unsurprisingly, a number of 'old' universities were in favour of preserving the *status quo*.) The recommendations, when relayed to the senior committee, were accepted. Policy decisions, particularly where they involve money, are the business of policy makers. It is relatively rare for independent research findings to stimulate a re-examination of received wisdom, question it with evidence, and provide impetus for change.

For the future, JISC has a Five-Year Strategy (1996-2001). It has assigned high priority to the continued development of a distributed, national electronic resource (DNER) and has described the parameters of a national collection.¹⁶ It intends to set aside a proportion of its funds to facilitate the creation and delivery of this resource. As at present, many of the funds spent will be recovered from those higher education institutions that elect to use the content, but it will continue to provide this content free at the point of use for members of its community.

Acknowledgements

These studies would not have been possible without the generous cooperation of the many academic libraries and information services who supplied the information over several years to the surveys cited here. We thank both them and the two datacentres (BIDS and EDINA) who have given us access to their data. We are also grateful to the British Library Research and Innovation Centre and the Joint Information Systems Committee for supporting these studies.

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Notes

- ⁱ For example, when a law department has paid for access to an external service (e.g. LEXIS) for staff and students of the department.
- ⁱⁱ Datasets is a more generic term often used to include non-bibliographic assemblies. In this paper 'datasets' and 'databases' are used synonymously.
- ⁱⁱⁱ NISS: National Information Services and Systems; CHEST: Combined Higher Education Software Team. Both operations are jointly directed.
- ^{iv} BIDS: [University of] Bath Information and Data Services.
- ^v The Computer Board was replaced in 1991 by the Information Systems Committee (ISC) which was responsible to the University Funding Council (UFC). In 1993 the Higher Education Funding Councils were formed, replacing the UFC and the ISC was renamed JISC (Joint Information Systems Committee).

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- vi) Top slicing: a method by which higher education institutions are 'taxed' for central services, administration, etc prior to receiving their funding allocation, the amount being proportional to their number of students. Before the abolition of the binary line (i.e. the division of universities and polytechnics), the sizes of institutions varied less than they do now. It is unlikely, however, that the notion of top-slicing has much influence on how librarians judge their ability to meet subscription costs, which are dependant mostly on local budgetary constraints.
- vii) The RAE is a five-yearly independent assessment of the published research output of academic research groups.
- viii) Universities' Statistical Record. University Statistics 1993-94, Volume 1: Students & Staff, August 1994. HEFCE(Higher Education Funding Council For England). Profiles of Higher Education Institutions, 1994: <http://www.niss.ac.uk/education/hefce/profiles/contents.htm>
- ix) OCLC's FirstSearch is an online enduser reference service providing access to nearly 50
- including popular commercial databases
 - such as ERIC, Periodical Abstracts, and
 - MEDLINE. It is available through a CHEST deal.
 -
 - x) Bath Information & Data Service (BIDS): ISI, Embase, Compendex, Royal Society of Chemistry. Edinburgh University Data Library (EDINA): Biosis Previews, Palmer's Index to the Times, Periodical Contents Index (PCI).
 -
 - xi) Institutions could be offered the option of pay-by-use as an alternative to the 'normal' subscription for a dataset. This is done for OCLC FirstSearch. It could be attractive to smaller institutions, or those with only a peripheral interest in a dataset.
 -
 - xii) E.g. where a dataset is predominantly for research, institutions which place more emphasis on research would be in higher tiers.
 -
 - xiii) Where payment to the database provider is dominated by an annual 'per site' element, the ability to lower subscriptions is limited, although a certain degree of cross site subsidy from 'larger' sites is thinkable.



Internet access for older people

Monica Blake

Information Consultant, 114 Glenarm Road, London E5 0NA

Email: mblakea@cix.compulink.co.uk

Abstract *This paper examines, via the published literature and interview, the relationship between older people and the technology needed to gain access to the Internet (mainly personal computers), then discusses opportunities for access in public places such as libraries.*

Introduction

The number of older people in the UK is growing, as is the percentage of older people in the population. Age Concern¹ reports that the number of people aged over 75 is projected to double by the middle of the next century, while the number aged 90 and over will have more than tripled. At the same time use of the Internet is expanding rapidly. The number of households in Britain with access to the Internet more than doubled from just under 400,000 in June 1996 to 960,000 in June 1997². But older people make up only a small proportion of Internet users. Of 1004 Internet users aged 15 years and older interviewed by NOP in June 1997, only 6% were aged 55+. A recent BLRIC report brought together material concerning these trends in an attempt to explore the possible contribution the Internet could make to the lives of older people³. After looking at information and older people from a library and information perspective, it considered questions of access to the Internet, Internet resources (also reported at <http://www.ariadne.ac.uk/issue14/older-people/>), and the current use of the Internet by older people. This paper focuses on access to the Internet by older people.

Many older people do not have access to IT. According to the Motorola Report⁴, 'IT Haves are more likely to be found among men, the young, the employed and the upper and middle classes'. Habib *et al.*⁵ state that three social groups are at risk from 'exclusion in the Information Society, whether or not they experience poverty: women, ethnic and racial groups, and older people'.

In this paper, older people are taken to be adults aged 60 and over. However, many organisations for, and reports about, older peo-

ple include those who are younger. For example, Saga caters for people of 50+; SeniorNet is aimed at adults of 55+; the Motorola Report⁴ gives the upper age group as those of 45+. Following current practice in the UK, the expression 'older people' is used in preference to 'the elderly'. Other common terms are 'third age', pensioners, senior citizens and elders. In North America, 'seniors' is the most commonly used word, although 'third age' is becoming increasingly popular.

There is great diversity among older people, in their interests and education, as well as in their fitness and level of income. Many older people are among the poorest in the community, while others have considerable financial resources and are targeted as new consumers. Retirement is an aspect of life shared by most older people. For many the additional time associated with retirement provides an opportunity to explore new horizons, by travelling, studying or developing their interests. Hales-Mabry⁶ notes that people are living longer and are in much better health than ever before. This study does not lay emphasis on health problems suffered by older people, but it retains an awareness of such common physiological changes as declining vision and slowing of movement.

Technology and older people

Use of computers

Access to the Internet is generally via personal computers. However, many older people are out of employment and formal education and are therefore unable to learn about or access the Internet at work or at college. They may have retired before PCs became widely available in the workplace.

Some authors are convinced of the potential benefits that computer technology can bring to older people⁷⁻⁹. Computers in the home and in the community can be a valued tool for communication, stimulation, information access and health care. They are patient: learners can rehearse a skill repeatedly until it has been mastered. They are uninhibiting. They provide immediate feedback. They require minimal physical skill or force. Skills developed on the computer can be transferred to other situations such as computer-assisted banking. In addition, facility with computers opens up educational possibilities through computer-aided instruction.

Sixsmith and Sixsmith¹⁰ describe ageist attitudes in the way older people are perceived in relation to new technology. They are seen to be resistant to change in general and technological change in particular. As consumers, they are often assumed to be too set in their ways or too cautious to be interested in the new technologies that come on the market. Such attitudes are not supported by research. Studies show that older people are learning information technology skills and using their new found expertise and growing personal confidence to carry out tasks which are personally important to themselves¹¹. They are using computerised tools to increase their interaction with others, acquire new information and knowledge, engage in creative pursuits, and strengthen problem-solving abilities¹².

Disability issues

Despite many glowing reports of older people being empowered by computer technology, there are a number of limitations to the widespread use of computing by older adults. In addition to financial problems, physiological changes associated with ageing can make computers difficult to use.

On the face of it, the Internet has advantages for people with disabilities. Those with mobility problems are able to use the Internet for services such as home shopping and chatting without needing to go out. Hearing ability is irrelevant to email, Usenet and most of the web. For those with impaired vision, the Net offers information and communication re-

sources beyond the scope of large print books, audio cassettes and braille. Perry and Macken¹³ believe that the cyberspace revolution can 'level the playing field' for individuals with disabilities. This image is mirrored by Harris¹⁴ in an upbeat article claiming 'the Internet has the power to change the lives of disabled people'. However, as Stephanidis¹⁵ points out, while technological progress offers new opportunities, it may also introduce new barriers, human isolation and alienation if the diverse requirements of all potential users are not taken seriously into consideration. Hoot and Hayslip⁷ believe that issues related to physical difficulties have kept technology from older people.

The main physical problem older people face in regard to computer technology is poor eyesight. Davis¹⁶ provides figures on visual impairment among older people in the UK:

'Of the approximately one million people who are registrable as blind or partially sighted nine out of ten are over the age of 60. One in seven of all older people over the age of 75 are registrable as blind or partially sighted. The vast majority will not be totally blind but will have some degree of residual vision.'

Visual problems include impaired visual clarity, farsightedness, impaired peripheral vision and accommodatory ability. Within the field of visual impairment, there is considerable interest in the Internet. Craddock¹⁷ writes:

'The Internet has the potential of being a major breakthrough in providing equality of access to information for people who find it difficult to read print. It is beginning to be described as the greatest innovation since the invention of Braille.'

The Royal National Institute for the Blind (RNIB) provides information about designing a web site so that it is fully accessible by visually impaired people (<http://www.rnib.org.uk/wedo/research/hints.htm>). For example, it is best to avoid italics, underlining of text and capitalisation of whole words, as these can be difficult to read for partially sighted people. If a coloured background is to be used, then one of solid colour is preferable to a textured or patterned one. Among its campaigning activi-

ties, the RNIB is a member of the World Wide Web Consortium (W3C) so that it can influence the way HTML evolves; also it contacts web sites that are difficult for blind people to use, and advises on improvements.

People with impaired sight can use programs to magnify text to a size they can read. An intelligent program will attempt to track each item on the screen, including menus, scroll bars and dialog boxes, and decide which item to follow at any given time. Lunar, which sells for about £230, zooms text up to five times its normal size¹⁴. For totally blind users, there is software that translates text into braille, using a braille reader, or speech, using a speech synthesiser (also known as a voice synthesiser). Braille is expensive – £5000 for a 40-cell reader – and at least £1500 for a printer that will ‘braille out’ pages onto paper. Speech synthesisers are cheaper. A plug-in box costs some £500, and software to work with a standard sound card is even cheaper.

Karshmer¹⁸ notes that the use of modern computers and software by the visually handicapped has become more difficult over the past few years. In earlier systems the user interface was a simple character-based environment, and simple devices like screen readers, braille output and speech synthesisers were effective. Current systems now run graphical user interfaces (GUIs) which have rendered these simple aids virtually useless. For Karshmer, ‘What has become enabling technology for the sighted has become disabling technology for the visually impaired in our society.’ Carey¹⁹ also addresses issues facing people with visual impairment in regard to the information technology revolution. He considers that GUIs present a temporary crisis in text access for visually impaired people but this will be overcome in the next three years through software which turns the bit maps back into DOS-like characters – which software can turn into braille or synthetic speech – in much the same way that optical character recognition software turns images into character codes. There will, however, be time lags in the development of appropriate software.

The central problem for visually impaired people in the GUI era, considers Carey, is their comparative disadvantage in information

processing. A person with full vision can scan 20 boxes, select three options, click and then access the selected files. A visually impaired person with a ‘soft braille’ output device, a speech synthesiser or magnification software has to move deliberately through all 20 options before making selections. In the Internet environment this means higher telephone bills, as well as the frustration of extremely slow browsing.

Lie and Pemberton²⁰ report on extending web style sheets to include facilities for the visually impaired as part of the HTML work within W3C. HTML was originally intended as a structural mark-up language, but later additions were made to influence presentation. The style sheets work brings HTML back to the original aim, while still allowing authors to influence the presentation. One advantage of HTML being a structure language over a presentational language is that it is easier to make an aural browser using a speech synthesiser; for example, the advantage of using to specify emphasis, rather than <I> to create italic text, is that such an aural browser can read the emphasised text with more emphasis.

Czaja and Barr²¹ point out that age-related declines in auditory functioning may affect the ability of older people to interact successfully with speech technologies. For example, older people may have difficulty comprehending synthesised speech. While the Internet opens up communication channels like email and discussion groups to those with hearing problems, the growing use of speech technology may be a barrier in the future. Arthritis-related dexterity problems associated with increasing age might interfere with older people’s use of computer technology⁷. Manipulation of keyboard and mouse can be painful for those with arthritic fingers – hence the use of touch screen technology in IT projects with older people such as the RISE.UK project in Barnsley (<http://www.calmax.co.uk./rise.uk>).

Training older people to use technology

A number of teachers and researchers have written of their experiences with older people and computers. Bourdelais²², for example, has reported how rewarding he found teach-

ing a computer fluency class to older people in a nursing home. Morris²³ provided an introductory computer course to adults age 60 years and over in an experimental setting. Morris made a number of observations about training older adults to use computers:

- Older people should not 'be lumped in with younger computer novices'.
- A positive initial experience with a computer is important to combat any technological alienation.
- Training in pairs is cost-effective.
- Older trainees require about twice the time of younger trainees.
- Older adults need an instructor around to answer questions.
- Self-paced learning is important for older trainees.

This last point was mentioned by Gibson¹¹. Reporting on teaching word processing skills to older adults so that they could write their own life histories, she added that computer teaching needs to be relaxed, informal and uncompetitive. She found that ready access to computers for additional practice between teaching sessions was helpful, and that an instructional manual with graded exercises and minimal tutor or mentor support in the early stages of learning reduced anxiety and assisted learning.

Czaja and Barr²¹ list possible cognitive problems, before offering suggestions on training conditions. They note that older people:

- exhibit general slowing of behavioural reaction time;
- take longer to retrieve information from long-term memory;
- take longer to choose among response alternatives;
- take longer to execute responses;
- show a decrease in perceptual encoding of ambiguous stimuli; and
- show a decline in perceptual flexibility.

Despite such drawbacks, Czaja and Barr believe that, with training and practice, older adults are able to learn new skills. They suggest that age differences in learning ability can be reduced by manipulation of external variables like pacing, amount of practice, and the instructional approach. For example, older people have been found to be better able to

learn to use a computer text-editor if they have been trained by a goal-oriented, discovery training method as opposed to the traditional method of step-by-step drill and practice.

Morris²³ notes that spatial memory skills decline with age, and warns that software designed for older people should not place demands on spatial skills. Bourdelais²² advises against bringing video games to classes. In his experience, women find them silly and men get frustrated when the game moves too fast. He concedes that games may be valuable as physical therapy, but believes they should be introduced by a physical therapist who can demonstrate their practical value.

These examples are from American writers. In the UK, a number of colleges are beginning to offer courses in computing for older people, and Saga occasionally runs weekend computer courses. Internet training is offered in some public libraries, telecottages and cybercafes. An interesting UK initiative is Hairnet²⁴, which offers Internet education to people of 50+. Started by Emma Solomon and Caroline Lambie, Hairnet is a ten-week course that starts with computer basics, goes on to sending email and finding information on the Internet, and concludes with students creating their own home page (www.hairnet.org/class.html).

Future technologies

There are some indications that forthcoming developments in interactive television technology may help older people gain access to the Internet. In the UK television ownership (99% of the population) is certainly more widespread than that of PCs (29%)²⁵, and older people are the biggest watchers of television²⁶. The company NetChannel in Cambridge offers an Internet service via the television with a product called NetStation²⁷. According to publicity material, NetStation at £269 is much cheaper than a PC and is easier to use. However, the situation is not clear.

One expert on IT literacy interviewed by the author³ did not think that set-top boxes would provide a breakthrough: 'To do anything useful, so many add-ons would be needed that it would still be complicated to use.' Another disagreed: 'Digital TV is the future. Keyboards

are no good. Access will be via pads – remote control and voice.’ When asked how they would like to access online services, respondents to a survey by MORI on behalf of Motorola⁴ were evenly split between using a PC, a telephone and a television. The survey authors speculate that the arrival of digital television, with its ability to deliver interactive services through a well-liked medium, will prove a turning point for the online services industry. However, the survey found that 73% of respondents knew little or nothing about this technology, and those who did have some knowledge were more interested in better quality television pictures (61%) and a wider choice of programmes (42%). Only 5% expressed interest in interactive services such as home shopping.

Marks²⁶ notes that, according to the Independent Television Commission, ‘Elderly people could be shut out of the next generation of interactive TV services unless steps are taken to make these services easier to use.’ He reports that efforts are being made to improve the design, and quotes experts as saying, ‘tailoring a remote control and interactive screen interface exclusively for the elderly would be patronising nonsense. But design the system for people with restricted mobility (through physical disabilities like arthritis) or visual and auditory impairments, and you should get a system that can be used by just about anybody.’

Public access to the Internet

One in 25 British households are linked to the Internet². People without home access may make use of facilities in cybercafes, telecottages, schools or libraries. Of these options, libraries seem the most likely choice for older people.

Public libraries are widespread (with over four thousand service points in the UK), and many older people are regular users. According to figures cited by the Comedia Report²⁸, usage by older people is higher than average: in one study, 29% of all regular borrowers were over 65, although this age group made up only 19% of the population; in another, the 60+ group was 6% higher in the library users profile than in the borough population. The DNH Public Library Review remarked on the ‘many

submissions from senior citizens which emphasised the importance of the library service in their lives’²⁹.

There is much interest in the use of the Internet in public libraries (e.g. Ormes³⁰), and over the last few years a number of reports and research projects have explored this subject. The most recent report (*New Library: The People’s Network*³¹) offers some hope for the future. Published by the Library and Information Commission in October 1997, it recommends establishing a development agency – the Public Library Networking Agency – to energise and coordinate UK-wide networking developments. This agency, says the report, should be charged with developing the public library network through the creation of a UK ‘backbone’ infrastructure to link individual public library networks, and negotiation with library authorities to upgrade local library networks to a common UK standard on a shared-funding basis. According to the report, the ‘public library embodies the democratic principle of the public’s right to information in whatever form. People are conscious that the use of IT is fundamental in today’s society, and recognise that public libraries have a role to play in making it accessible to all – to level the playing field and provide technology for those who cannot afford to buy it.’ The authors have a vision of the public library as the natural place for people to turn to for advice, support and practical training in IT and common skills. They suggest it could potentially play a significant role in training and retraining.

Batt³² reports that in June 1997 77% of UK public library authorities had some kind of Internet access, with 46% providing public access to the Internet. In terms of service points, 357 (9%) had Internet access and 215 (5%) provided public access. Although there is a long way to go before all public libraries can offer access to the Internet, this represents a considerable increase on figures for November 1995, when Ormes and Dempsey³³ found that 17% of authorities and 0.7% of all service points offered Internet access to the public, and 3% of individual service points had some form of Internet connection.

Project EARL (Electronic Access to Resources in Libraries) is a consortium of public

libraries that have joined together to coordinate the public library response to the Internet. It provides a framework for partnerships within the public and private sectors, and aims to make the advantages of the Internet available to all library users and other members of the public. Croydon Public Library has led the way in exploring the issues involved in offering Internet access to the public. The Croydon Library Internet Project (CLIP) aimed to assess the value of the Internet to the general information services provided by public libraries; to identify the benefits of providing direct public access to the Internet; to investigate the contribution Internet access can make in a particular subject, for a selected group; and to consider methods of connection and networking models for public libraries³⁴.

Batt and Kirby³⁵ point out that, although in the future many more people will have access to the Internet at home, at work, or in school, the information management and skills support which public librarians give will still be needed and the access for those without connections elsewhere forms part of the lifelong learning and community support services which public libraries must offer.

IT POINT, a project in Chelmsley Wood public library, Solihull, demonstrated that there is a 'market' for public libraries to provide a service offering public access to computer software and network facilities³⁶. There was heavy demand from users: initial interest in and demand for the service far exceeded the expectations of the project team. Share the Vision (STV) is a joint project between the RNIB and other national organisations in co-operation with public library authorities. STV aims to promote access for blind people to reading and information services through a local library. As indicated in the section on disability issues, visually impaired people are particularly concerned about appropriate web page design. Input Output Centres Ltd is a private company which works in partnership with public libraries throughout the UK³⁷. The company manages public access computer centres within libraries. These centres offer a range of services including computer hire, computer application training and Internet access.

Public access to the Internet may be stimulated by the growing number of community networks in the UK. Community networks provide support and training to help individuals and groups make use of new technology, and are concerned to ensure inclusion of all members of the community. The technology is used for personal development and citizen empowerment. Mulquin³⁸ gives an interesting example of older people's use of a community network. In the 'wired town' of Blacksburg, Virginia, older people 'met up' first through the local community network, then – because they lived close to each other – began to take part in social activities together.

Conclusion

Some older people are making use of the Internet, but numbers are low compared with their percentage in the population as a whole. This paper has indicated some of the concerns to be addressed when using computers to introduce older people to the Internet. First is lack of familiarity with PCs. Studies have shown that – despite ageist suggestions to the contrary – older people have the cognitive ability to learn to use computers, even if it takes longer than for children or younger adults. This learning is facilitated by conditions like separate training courses for older people and allowing older people to learn at their own pace. More of a problem is poor vision. Most people's eyesight declines with increasing age, and this can make computers difficult to use. There are technical solutions, but they can be laborious and/or expensive. Another major concern is gaining access to a computer. For those who can afford their own, there is the question of coping with the technology. In the future, it is possible that interactive television may increase access, but there is little evidence to support this view.

For most older people, some kind of public access would seem to be the best solution, with the public library presenting itself as an appropriate venue. Increased availability of the Internet in public libraries would certainly enhance opportunities for older people to gain access to the Internet.

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